The Status of Water Quality in Arizona – 2004

Arizona's Integrated 305(b) Assessment and 303(d) Listing Report

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Janet Napolitano
Governor

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Director

August 25, 2004

rec 9/2/04

Alexis Strauss, Director
Water Management Division
USEPA Region IX
75 Hawthorne St. WTR-1
San Francisco, CA 94105-3901

Dear Ms. Strauss:

Enclosed is Arizona's final 2004 Integrated Report which includes the 305(b) Assessment and the 303(d) List. You will find two paper copies and an electronic copy on CD in Word Perfect format, as requested. Please note that there are four stream reaches that appeared on the draft 303(d) list that are currently under appeal for chronic dissolved mercury listings. The following listings have therefore been removed from the 303(d) list pending outcome of the administrative hearing.

- Boulder Creek, unnamed tributary to Wilder Creek, AZ15030202-006B
  Attaining some uses, placed in Category 2
- Boulder Creek, Wilder Creek to Copper Creek, AZ15030202-005A
  Remains on the 303(d) List for arsenic, copper and zinc
- Burro Creek, Boulder Creek to Black Canyon, AZ15030202-004
  Attaining some uses, placed in Category 2
- Butte Creek, headwaters to Boulder Creek, AZ15030202-163
  Inconclusive, placed in Category 3

An additional stream reach, Cienega Creek, from headwaters to Gardner Canyon, AZ15050302-006A (Santa Cruz watershed), was erroneously placed on the draft 303(d) list for *Escherichia coli*. In fact, Cienega Creek was not sampled for *E. coli* and the exceedances appeared in the database as a result of a data uploading problem. This reach has been moved to Category 2, attaining some uses, due to the lack of *E. coli* samples. The reach downstream, Cienega Creek, from Gardner Canyon to USGS gage (Pantano Wash), AZ15050302-006B; has been moved from Category 1 to Category 2, also due to lack of *E. coli* samples.

Please note that after the appeal process is complete for the dissolved mercury listings, ADEQ will send an updated 303(d) list if changes are made. Lastly, based on conversations with your staff, it was agreed that ADEQ will not publish the final Integrated Report until after EPA has completed its review; however, ADEQ will post the 303(d) list only on its website until that time. Given the likelihood of EPA "overfiling," it was decided that it would be less confusing for all parties to publish one final document that is inclusive of both the state and federal listings.

Sincerely,

Karen Smith, Director
Water Quality Division
Arizona Department of Environmental Quality

Cc: Peter Kozelka, Monitoring and Assessment (WTR-2)
Janet Hashimoto, Monitoring and Assessment (WTR-2)

1. "Impaired water" means a Navigable water for which credible scientific data exists that satisfies the requirements of § 49-232 and that demonstrates that the water should be identified pursuant to 33 United States Code § 1313(d) and the regulations implementing that statute.

2. "Surface water quality standard" means a standard adopted for a navigable water pursuant to §§ 49-221 and 49-222 and § 303(c) of the Clean Water Act (33 United States Code § 1313(c)).

3. "TMDL implementation plan" means a written strategy to implement a total maximum daily load that is developed for an impaired water. TMDL implementation plans may rely on any combination of the following components that the Department determines will result in achieving and maintaining compliance with applicable surface water quality standards in the most cost-effective and equitable manner:

(a) Permit limitations.

(b) Best management practices.

(c) Education and outreach efforts.

(d) Technical assistance.

(e) Cooperative agreements, voluntary measures and incentive-based programs.

(f) Load reductions resulting from other legally required programs or activities.

(g) Land management programs.

(h) Pollution prevention planning, waste minimization or pollutant trading agreements.

(i) Other measures deemed appropriate by the department.

4. "Total maximum daily load" means an estimation of the total amount of a pollutant from all sources that may be added to a water while still allowing the water to achieve and maintain applicable surface water quality standards. Each total maximum daily load shall include allocations for sources that contribute the pollutant to the water, as required by § 303(d) of the clean water act (33 United States Code § 1313(d)) and regulations implementing that statute to achieve applicable surface water quality standards.

Added by Laws 2000, Ch. 162, § 1.

§ 49-232. Lists of impaired waters; data requirements; rules

A. At least once every five years, the department shall prepare a list of impaired waters for the purpose of complying with § 303(d) of the Clean Water Act (33 United States Code § 1313(d)). The department shall provide public notice and allow for comment on a draft list of impaired waters prior to its submission to the United States environmental protection agency. The department shall prepare written responses to comments received on the draft list. The department shall publish the list of impaired waters that it plans to submit initially to the regional administrator and a summary of the responses to comments on the draft list in the Arizona administrative register at least forty-five days before submission of the list to the regional administrator. Publication of the list in the Arizona administrative register is an appealable agency action pursuant to title 41, chapter 6, article 10 that may be appealed by any party that submitted written comments on the draft list. if the department receives a notice of appeal of a listing pursuant to § 41-1092,[1] subsection B within forty-five days of the publication of the list in the Arizona administrative register, the department shall not include the challenged listing in its initial submission to the regional administrator. The department may subsequently submit the challenged listing to the regional administrator if the listing is upheld in the director's final administrative decision pursuant to § 41-1092.08, or if the challenge to the listing is withdrawn prior to a final administrative decision.

B. In determining whether a water is impaired, the department shall consider only reasonably current credible and scientifically defensible data that the department has collected or has received from another source. Results of water sampling or other assessments of water quality, including physical or biological health, shall be considered credible and scientifically defensible data only if the Department has determined all of the following:

1. Appropriate quality assurance and quality control procedures were followed and documented in collecting and analyzing the data.

2. The samples or analyses are representative of water quality conditions at the time the data was collected.

3. The data consists of an adequate number of samples based on the nature of the water in question and the parameters being analyzed.

4. The method of sampling and analysis, including analytical, statistical and modeling methods, is generally accepted and validated in the scientific community as appropriate for use in assessing the condition of the water.

C. The department shall adopt by rule the methodology to be used in identifying waters as impaired. The rules shall specify all of the following:

1. Minimum data requirements and quality assurance and quality control requirements that are consistent with subsection B of this section and that must be satisfied in order for the data to serve as the basis for listing and delisting decisions.

2. Appropriate sampling, analytical and scientific techniques that may be used in assessing whether a water is impaired.

3. Any statistical or modeling techniques that the department uses to assess or interpret data.

4. Criteria for including and removing waters from the list of impaired waters, including any implementation procedures developed pursuant to subsection F of this section. The criteria for removing a water from the list of impaired waters shall not be any more stringent than the criteria for adding a water to that list.

D. In assessing whether a water is impaired, the department shall consider the data available in light of the nature of the water in question, including whether the water is an ephemeral water. A water in which pollutant loadings from naturally occurring conditions alone are sufficient to cause a violation of applicable surface water quality standards shall not be listed as impaired.

E. If the department has adopted a numeric surface water quality standard for a pollutant and that standard is not being exceeded in a water, the department shall not list the water as impaired based on a conclusion that the pollutant causes a violation of a narrative or biological standard unless:

1. The department has determined that the numeric standard is insufficient to protect water quality.

2. The department has identified specific reasons that are appropriate for the water in question, that are based on generally accepted scientific principles and that support the department's determination.

F. Before listing a navigable water as impaired based on a violation of a narrative or biological surface water quality standard and after providing an opportunity for public notice and comment, the department shall adopt implementation procedures that specifically identify the objective basis for determining that a violation of the narrative or biological criterion exists. A total maximum daily load designed to achieve compliance with a narrative or biological surface water quality standard shall not be adopted until the implementation procedure for the narrative or biological surface water quality standard has been adopted.

G. On request, the department shall make available to the public data used to support the listing of a water as impaired and may charge a reasonable fee to persons requesting the data.

H. By January 1, 2002, the department shall review the list of waters identified as impaired as of January 1, 2000 to determine whether the data that supports the listing of those waters complies with this section. If the data that supports a listing does not comply with this section, the listed water shall not be included on future lists submitted to the United States Environmental Protection Agency pursuant to 33 United States Code § 1313(d) unless in the interim data that satisfies the requirements of this section has been collected or received by the department.

I. The department shall add a water to or remove a water from the list using the process described in § 49-232, subsection A [2] outside of the normal listing cycle if it collects or receives credible and scientifically defensible data that satisfies the requirements of this section and that demonstrates that the current quality of the water is such that it should be removed from or added to the list. A listed water may no longer warrant classification as impaired or an unlisted water may be identified as impaired if the applicable surface water quality standards, implementation procedures or designated uses have changed or if there is a change in water quality.

Added by Laws 2000, Ch. 162, § 1.

[1] So in original. Should read "§ 41-1092.03".

[2] So in original. Should read "subsection A of this section" instead of "§ 49-232, subsection A".

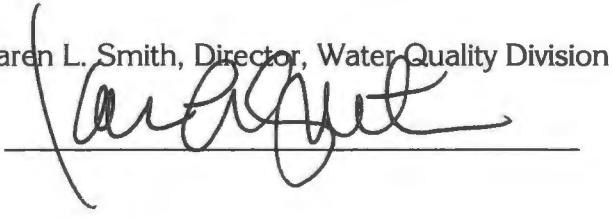
§ 49-233. Priority ranking and schedule

A. Each list developed by the department pursuant to § 49-232 shall contain a priority ranking of navigable waters identified as impaired and for which total maximum daily loads are required pursuant to § 49-234 and a schedule for the development of all required total maximum daily loads.

B. In the first list submitted to the United States Environmental Protection Agency after the effective date of this article, the schedule shall be sufficient to ensure that all required total maxi-

Approved by:

Karen L. Smith, Director, Water Quality Division



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The Status of Water Quality in Arizona -- 2004
Arizona's 2004 Integrated 305(b) Assessment and 303(d) Listing Report

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A special thanks to the ambient monitoring staff who travel across the state collecting the data used in this report:

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Amanda Fawley
Susan Fitch
Joe Harmon
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Cover photo: A view of the Gila River above the confluence of the San Francisco River. This ADEQ sample site is located in the Gila Box Riparian National Conservation Area, south of Morenci, Arizona, in the Upper Gila watershed.

Program Contacts

ADEQ's Web Site – Current information about programs and status of many projects can be downloaded from ADEQ's Web Site: http://www.azdeq.gov.

ADEQ's Programs -- Further information about water quality ambient monitoring data, standards, and assessments can be obtained by contacting the following ADEQ program staff:

Assessments: Melanie Diroll (602) 771-4616
Bioassessment: Patti Spindler (602) 771-4543
Lakes monitoring: Susan Fitch (602) 771-4541
Fish advisories: Sam Rector (602) 771-4536
GIS coverages: Victor Gass (602) 771-4517
Ground water monitoring (ambient): Doug Towne (602) 771-4412
Ground water data retrievals: Marianne Gilbert (602) 771-4563
Nonpoint Source Program: Susan Craig (602) 771-4509
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208 Planning: Edwina Vogan (602) 771-4606
Water Quality Improvement Grants Program: Susan Craig (602) 771-4509
Watershed Management Program: Susan Craig (602) 771-4509

A more comprehensive list of water quality protection programs is provided in the final appendix of this report (**Appendix E**).

Other Agencies -- Contact the following agencies to obtain further information about their programs or to obtain copies of their data:

Arizona Department of Water Resources - Basic Data (602) 417-2457
Arizona Game and Fish Department (602) 789-3260
    Urban Lakes Program (602) 789-3268
Arizona State Parks
    Slide Rock State Park (520) 639-2962 (Steve Pace)
Environmental Protection Agency Region IX (San Francisco)
    303(d) and TMDL's (415) 972-3416 (Dave Smith)
    305(b) Assessments (415) 972-3462 (Terry Fleming)
    Standards Development (415) 972-3498 (Gary Wolinsky)
    Nonpoint Source (415) 972-3444 (Ephraim Leon-Guerrero)
Mohave County Health Department -- Lake Havasu (520) 453-0712 (Sandy Hillery)
National Parks Service
    Glen Canyon National Recreation Area (520) 608-6377
    Grand Canyon National Park (520) 638-7905 (John Rihs)
Salt River Project (602) 236-5900 (Greg Elliott)
Southern Nevada Water Authority (702) 258-3948 (Jeff Johnson)
University of Arizona, (520) 626-2386 (Dave Walker)
US Army Corps of Engineers (213) 452-3529 (Robert Stewart)
US Bureau of Land Management/Phoenix (602) 580-5500 (Jim Renthal)
US Bureau of Reclamation
    Colorado Grand Canyon (520) 556-7051
    Upper Colorado Region (801) 524-3700 (Jerry Miller)
    Lake Powell (928) 608-6377 (Mark Anderson)
US Fish and Wildlife Service (602) 640-2720 (Kirke King)
US Forest Service
    Apache-Sitgreaves National Forest (928) 333-4301
    Coconino National Forest (520) 527-3600
    Coronado National Forest (520) 670-4552 (Robert Lafevre)
    Kaibab National Forest (928) 635-8200 (Dave Brewer)
    Prescott National Forest (928) 567-4121 (Michelle Girard)
    Tonto National Forest (602) 225-5200 (Grant Loomis)
US Geological Survey (480) 379-3087 (Cheryl Partin)
    NAWQA (520) 670-6135 (x223) (Gail Cordy)

Table of Contents

I. Arizona's 2004 Integrated Assessment and Listing Process

Why do we write this report?

This biennial report consolidates reporting requirements under the federal Clean Water Act sections 305(b) (assessments), 303(d) (impaired waters list), 106 (monitoring), 204 (grants), 319 (nonpoint source), and 314 (lakes program). It incorporates recommendations made in the U.S. Environmental Protection Agency's (EPA) "Guidance for 2004 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act" issued in July 2003. This report also provides information required in Arizona's TMDL statute (Arizona Revised Statute 49-231 through 49-238) and Impaired Water Identification Rule (Arizona Administrative Code R11-18-601 through 606).

In addition, the Arizona Department of Environmental Quality (ADEQ) recognizes that this report can provide many state and federal agencies, organizations, and interested parties with a current reference document on the status of surface and ground water quality in Arizona. The following objectives are fulfilled by the publication of this water quality assessment report:

- Report on statewide surface and ground water quality in Arizona (excluding tribal lands);
- Identify and delineate all assessed surface waters;
- Identify the status of designated use support for individual surface waters based on numeric or narrative water quality standards;
- Document the basis for ground water and surface water assessment determinations;
- Identify pollutants or water quality characteristics that cause impairment;
- Identify possible sources of pollutants;
- Indicate where standards are exceeded solely due to natural conditions;
- Describe the state's monitoring program and progress toward achieving comprehensive assessments for all surface waters;
- Identify where additional monitoring may be needed to complete assessments (Planning List) or support the development of Total Maximum Daily Load (TMDL) analyses, including a schedule for this monitoring;
- Identify and prioritize where additional TMDLs need to be completed;
- Provide opportunity for public review and respond to comments concerning assessments and the state's 303(d) listing proposals;

This report was written to be useful for both technical and nontechnical audiences. Technical terms, acronyms, and abbreviations used in his document are defined in **Appendix A.**

State TMDL statute and Impaired Water Identification Rule

The 2002 Integrated Assessment and Listing Report marked a significant change in Arizona's assessment and listing processes, due to new state statutes and regulations adopted in 2000. These statutes and rules regulate the identification of impaired waters and the prioritization and completion of Total Maximum Daily Load (TMDL) analyses. Arizona continues to implement these requirements, described below, in the 2004 report.

A Total Maximum Daily Load Analysis (TMDL)

A TMDL is a written, quantitative plan and analysis to determine the maximum loading on a pollutant basis that a surface water can assimilate and still attain and maintain a specific water quality standard during all conditions. The TMDL allocates the loading capacity of the surface water to point sources and nonpoint sources identified in the watershed, accounting for natural background levels and seasonal variation, with an allocation set aside as a margin of safety.

Total Maximum Daily Load

Statute -- Arizona Revised Statute Title 49, sections 231-238 **(Appendix B)**, established procedures for identifying impaired waters which require TMDL analyses. For 303(d) listing decisions, the statute requires that ADEQ:

- Adopt, by rule, the methods used to identify "impaired" waters;
- Use only reasonably current, credible, and scientifically defensible data;
- Consider the nature of the water (e.g., ephemeral, intermittent, or perennial) in assessing whether a surface water is impaired;
- Determine whether pollutant loadings solely from naturally occurring conditions are sufficient to exceed a water quality standard, and if so, not list as "impaired";
- Adopt narrative implementation procedures through a public process before using narrative standards to identify impaired waters. These procedures must identify the objective basis for determining a narrative or biological standard violation.

Impaired Water Identification Rule -- ADEQ developed the Impaired Water Identification Rule (R18-11-601through R18-11-606) **(Appendix B)** as required

in the state statute discussed above. These rules establish the following:

Criteria for identifying a surface water as impaired and placing it and identified pollutants on the 303(d) List;
Criteria for removing a pollutant or surface water from the 303(d) List;
Criteria for prioritizing the 303(d) listed waters for TMDL development.
"Credible data" criteria;
Data submission and record keeping;
General data interpretation requirements; and
Criteria for placing a surface water on the Planning List for further monitoring;

Although the Impaired Water Identification Rule regulates the listing of waters only, and does not set requirements on those waters not placed on the 303(d) List or Planning List, ADEQ has chosen to apply the same data interpretation criteria to all waters assessed to maintain consistency of methods. Data that do not meet the "credible data requirements" will not be used to make any assessment, be it "attaining" or "impaired." All data collected by or submitted to ADEQ will be considered and noted in the monitoring tables, but will not be used to make an assessment if credible data requirements are not fulfilled.

Federal guidance and regulations

New Federal Guidance – In July 2003, EPA issued "Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act" concerning the development and submission of the 2004 305(b) water quality report and the 303(d) List of impaired waters. This guidance recommended, as it did for the 2002 assessment, that states submit an integrated water quality assessment report that included the state's 303(d) listed waters. **Table 1** indicates the information EPA requested, and where this information can be found in this report.

Table 1. EPA Requested Data or Information

Data or Information Requested	Data or Information Provided In This Report
Geographic delineations of each surface water assessed based on the new National Hydrography Dataset.	Arizona will be sending EPA the geographic delineations requested.
Status of and progress toward achieving comprehensive assessments of all waters.	Chapter VI provides an overview of surface water quality assessments and Chapter VII provides an overview of ground water quality assessments. ADEQ's monitoring programs are described in Chapter VIII.
Water quality standard attainment determinations for each surface water assessed.	Detailed monitoring information for each surface water assessed is provided in Chapter IV. Information is arranged by watershed. These tables clearly indicate the basis for each assessment.
Identify additional monitoring that may be needed to determine water quality standard attainment status and, if necessary, to support development of TMDLs.	The assessment tables in Chapter IV and the five category lists in Chapter V indicate whether a surface water will be on the Planning List or TMDL list and the pollutant(s) of concern. Monitoring activities are being developed based on this information.
Schedules for additional monitoring planned for each surface water assessed.	Chapter VIII describes ADEQ's monitoring programs, how these programs are integrated within the agency and with other agencies, and how waters are scheduled through a 5-year watershed monitoring cycle.
Surface waters and pollutants still requiring TMDLs.	Impaired waters which require TMDLs and their pollutants of concern are identified on the Category 5 list in Chapter V.
TMDL development schedules reflecting the priority ranking of each surface water and/or pollutant combination.	A priority ranking and a schedule for completing TMDLs for each pollutant impairing a surface water is provided in Chapter V.
A description of the assessment and listing methodology used to develop Clean Water Act section 303(d) Lists and section 305(b) Assessments.	Chapter III describes the assessment and listing methods used. Appendix B provides a copy of the Impaired Water Identification Rule and Arizona's statute concerning the listing process and TMDL development.
A description of the public participation process involved in developing the 303(d) list.	The public participation process is described in this chapter (Chapter I).

EPA guidance suggests that each surface water assessed is to be placed on one of the following five categories depending on the sufficiency of data and number of exceedances as defined in Arizona's assessment and listing methods (see discussion in Chapter III):

Category 1. Surface waters where all designated uses are being attained.

Category 2. Surface waters are attaining some designated uses but there are insufficient data to assess the remaining uses.

Category 3. Surface waters with insufficient data to assess any designated use.

Category 4. Surface waters are assessed as "not attaining" one or more designated use but a Total Maximum Daily Load (TMDL) analysis will not be required for one of the following reasons:

- 4 A. A TMDL has already been completed and approved by EPA but the water quality standards are not yet being attained.
- 4 B. Other pollution control requirements are reasonably expected to result in the attainment of water quality standards by the next regularly scheduled listing cycle.
- 4 C. The impairment is not related to a "pollutant" loading but rather caused by "pollution" (e.g., hydrologic modification).

Category 5. Surface waters are impaired for one or more designated uses by a pollutant and require development of a TMDL.

Note that EPA guidance suggests that waters assessed as "threatened" be placed in Category 5. Arizona will include "threatened" waters in Category 2 or 3 as "inconclusive" and in need of further monitoring until federal regulations clarify whether "threatened" waters must be included in the 303(d) List of impaired waters. Arizona is also waiting for EPA to establish clear methods for the trend analysis necessary to identify threatened waters (e.g. minimum number of samples needed to develop a trend). However, for this assessment, no waters were assessed as "threatened."

Federal Regulations – Impaired water listing requirements are also established in federal regulations (40 Code of Federal Regulations parts 122, 124, and 130.7). These regulations were applied in this assessment.

Changes in the assessment process

A few significant changes, summarized below, have been made to ADEQ's water quality assessment process since the last report in 2002.

Application of Chronic Standards -- The 2004 assessment is the first time ADEQ has applied chronic standards for the Aquatic and Wildlife designated use using the requirements of the Impaired Water Identification Rule (**Appendix B**, R18-11-605.D.2.b). In accordance with the rule, a surface water is assessed as "impaired" if more than one exceedance of an Aquatic and Wildlife chronic water quality standard occurs. Although a geometric mean of the last four samples must be taken to apply the standard for enforcement purposes, the Impaired Water Identification Rule requires only two exceedances to be placed on the 303(d) List, with no minimum sample size or application of a geometric mean.

Acute and Chronic Standards

Some water quality parameters have both an "acute" and a "chronic" standard (**Appendix C**). Acute standards are set at higher concentrations than chronic standards to protect aquatic life and wildlife from short-term exposures to the parameter of concern. Chronic standards are set at lower concentrations than acute standards to protect aquatic life and wildlife from effects of long-term exposure.

Turbidity and the New Suspended Sediment Concentration Standard – Arizona repealed its turbidity standard in March of 2002 and adopted a suspended sediment concentration (SSC) standard of 80 mg/L, expressed as a geometric mean with a four sample minimum, to protect Aquatic and Wildlife designated uses. As established in Arizona's Impaired Water Identification Rule (**Appendix B**), more than one exceedance of this geometric mean standard would result in an assessment of "impaired." One exceedance would be assessed as "inconclusive."

The new suspended sediment concentration standard is only applicable to samples collected at or near base flow, which the U.S. Geological Survey (USGS) defines as "flow sustained largely by ground water discharge." Precipitation events and most runoff must be excluded. To apply this standard for assessment purposes, it is necessary to calculate base flow for each site, which requires a large amount of flow data. Therefore, an assessment of SSC was usually possible only at or near USGS gaging stations, where an abundance of current and historical flow data is available. SSC assessment methods are explained in Chapter III.

Since the SSC standard was just recently adopted in 2002, a minimal amount of data were available for this assessment. Thus, ADEQ has continued to assess the turbidity standard repealed in 2002 in an effort to record potential suspended sediment problems. Additionally, these exceedances provide evidence of a potential narrative bottom deposit standard violation. The standard was assessed according to the methods described in Chapter III, and waters were either assessed as "attaining" or "inconclusive" due to turbidity. No 303(d) listings were made based on this parameter, since the standard was repealed. Any waters that would have been impaired or inconclusive under the former standard were called "inconclusive" and placed on the Planning List for further study.

It should be noted that EPA may place those waters that would have been impaired under the former standard on the 303(d) List, citing the exceedances as evidence of a narrative standard violation. ADEQ cannot make 303(d) listings based on narrative standards violations until narrative standard implementation procedures are adopted (procedures are currently being developed). A table showing all waters with significant turbidity and/or SSC exceedances appears in Chapter VI.

An ADEQ staff member, standing in a dry streambed, surveys the effects of erosion on Beaver Creek, located near Sprucedale, Arizona. Erosion of stream banks is a major contributor of suspended sediment in surface water.

How is the assessment and listing approved?

The Arizona 2004 303(d) Submission to EPA – In accordance with Arizona Revised Statute (49-232.A), the proposed 303(d) List is submitted to EPA following public review and publication of the list and response to comments in the Arizona Administrative Register. The 303(d) List is due to EPA on April 1st of each even-numbered year. This report is available at ADEQs web site in Adobe PDF format at: www.azdeq.gov.

The table showing Category 5 surface waters is the list of impaired waters that is submitted to EPA. The list identifies, by surface water segment, the pollutants or surface water characteristics not meeting surface water quality standards. EPA must approve this list and has the authority to add or remove surface waters from the list based on the federal Clean Water Act, regulations, or policies. Therefore, the list shown in this report can be modified by EPA. If changes are made, ADEQ will then provide a revised list on its internet site: www.azdeq.gov.

Public Participation in Arizona's Listing Process – Communicating with the public and promoting public input into the 303(d) listing process is an integral component of ADEQ's water quality management programs. A 30-day public review of this draft report was provided in November 2003 and a second draft in February 2004. A copy of the report is posted on ADEQ's web site, notices are placed in six local newspapers throughout the state (Phoenix, Tucson, Flagstaff, Sierra Vista, Yuma, and St. Johns), and flyers concerning the public review are mailed to a list of interested persons. Copies of the draft report are available on CD, in hard copy, or as an electronic download from the Internet.

Arizona's TMDL statute provides that any party who submits written comments on the draft list may challenge a surface water listing. Any challenged listing is not included on the initial submission to EPA, but may be subsequently submitted if the listing is upheld in the director's final administrative decision.

The response to comments and the draft 303(d) List were published in the Arizona Administrative Register, according to Arizona Revised Statute 49-232. Publication of the list in the Arizona Administrative Register is an appealable agency action and may be appealed by any party that submitted written comments on the draft list. When a notice of appeal of a listing occurs within the 45-day publication period in the Arizona Administrative Register, these listings are not included in ADEQ's its initial submission to EPA until the listing is upheld by ADEQ's Director or if the challenge is withdrawn.

EPA List Approval Process -- Within 30 days of receipt of a completed listing package, EPA must act on a state's list and priority ranking. EPA may approve or disapprove the entire list or disapprove only deficient portions.

If it disapproves a portion, EPA must within 30 days identify corrections (i.e., surface waters, pollutant(s), priority rankings) needed to make the list consistent with EPA regulations. EPA must also initiate another public review and comment period. The agency publishes its intended revisions in the *Federal Register*, newspaper notices, and other methods of notifying interested parties.

At the end of the comment period, EPA will evaluate public comments and compile a revised list. This corrected list is sent back to ADEQ to be incorporated into the water quality management plans and used as Arizona's approved 2004 303(d) List.

EPA Action on the Methods – Arizona's Impaired Water Identification Rule **(Appendix B)** establishes Arizona's 303(d) listing procedures. EPA provided comments on the rule in 2002 when it was developed. Although EPA does not have authority to approve this rule, EPA considers the methods it establishes when it reviews the 303(d) List Arizona submits. As described above, EPA may cite any deficiencies it raised in comments as a factor in a decision to disapprove all or part of Arizona's 303(d) List.

After EPA's final action is taken, ADEQ will post the final 2004 303(d) List on its website. Copies of the 2002 303(d) List (the current list, until EPA approves the 2004 list) are downloadable from the ADEQ web site in Adobe PDF format at: www.azdeq.gov.

An ADEQ staff member prepares to sample Willow Creek, north of Hannagan Meadow, on a snowy day in eastern Arizona.

II. Arizona's Unique Hydrology

Arizona's ecologic, hydrologic, and geographic diversity

Arizona is a large state with diverse ecological and geological conditions. Its geographical extent is equivalent to the combined size of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, and New York. All four of the deserts of North America occur in Arizona, along with three mountain ranges at or above 10,000 feet in elevation. An atlas of information **(Table 2)** provides statistics concerning population, land ownership, rainfall, and temperature in Arizona.

Ecoregions – Ecoregions **(Figure 1)** identify areas of relatively homogeneous ecological systems. These areas were delineated on a national scale based on geology, natural vegetation, and soils. Arizona contains portions of five of the 76 ecoregions recognized in the United States (Omernik, 1987).

Ecoregions in Arizona

Arizona/New Mexico Mountains – low to high mountains with grazed forests and woodlands.
Arizona/New Mexico Plateau – tablelands with considerable to very high relief and plains with high mountains. The Plateau is differentiated from the Colorado Plateau by its semi-humid grassland.
Colorado Plateau – tablelands with considerable to very high relief, plains with high mountains, grazed open woodland, and some irrigated agriculture.
Southern Basin and Range – desert valleys with desert shrubland associations, separated by low mountains.
Southern Deserts – desert shrubland associations on desert plains, with abrupt high mountains providing "sky islands" containing higher elevation ecosystem communities.

Hydrologic Provinces – The U.S. Geological Survey has also divided the state into three physiographic and hydrographic provinces based on the occurrence of water, geology, and altitude (Anderson et al., 1992) **(Figure 2)**.

Hydrologic Provinces in Arizona

Basin and Range – broad, gently sloping valleys, separated by sharply rising mountain ranges ("sky islands") receive more precipitation than the desert lowlands (20 inch annual average at Chiricahua National Monument, compared to 4-12 inches annually in the low deserts). The basins are filled with several thousand feet of sediments overlain with stream alluvium. This alluvium forms the most productive aquifers in Arizona, from which approximately 97% of all ground water is pumped (Wilson, 1991). Depths to ground water range from land surface near perennial streams to as much as 1,300 feet below land surface near the mountain front.
Central Highlands – is a geologic and physiographic transition between the other two provinces. The type and distribution of aquifers vary, with alluvial aquifers occupying relatively small basins, aquifers in consolidated sedimentary rocks, and fractured aquifers in hard rocks. Most perennial streams in the state originate in this province, which receives the highest annual precipitation (16-32 inches.)
Plateau Uplands – underlain by extensive consolidated sedimentary rock formations. Most of the ground water in this province is withdrawn from these formations more than 1000 feet deep, although localized alluvial aquifers also provide some ground water. This province has annual precipitation ranging from 10-25 inches. The eastern half is a barren plateau, with isolated alluvial deposits occurring only as narrow strips along large drainages, while the western half (north of the Grand Canyon) is wooded plateaus and mountain peaks which rise higher than 8,000 feet in elevation.

Population – The 2000 census data indicates that most of Arizona's population (60%) is located in the Phoenix metropolitan area. Since 1990 the state's population has increased 40%, with the Phoenix area growing from 2,120,000 to 3,252,000 (45%).

Table 2. Arizona Atlas

Population	5,131,000 people (2000 Census) (40% increase since 1990) Phoenix metro area 3,252,000 (14th largest metro area in the US) Tucson metro area 844,000 Yuma metro area 160,000 Flagstaff metro area 122,366
Surface Area	113,635 square miles
Population Density (average)	45 persons per square mile (US density is 80 persons per square mile)
Land Ownership	28% Indian Lands 17% Bureau of Land Management 17% Individual and Corporate 15% Forest Service 13% State of Arizona 10% Other federal, county, municipal
Elevation Variation	Highest point 12,630 feet above sea level (Humphrey's Peak) Lowest point 70 feet above sea level (near Yuma)
Annual Long-term Average Precipitation[a]	Lowest 3 inches (Yuma) Highest 27 inches (McNary) Phoenix metro 7 inches
Temperature[a]	Average Daily: Highest 88 °F (Yuma) Lowest 45 °F (Flagstaff) Record temperatures: Highest 128 °F (Lake Havasu City) Lowest -40 °F (Hawley Lake)
Average Annual Withdrawal (acre-feet) [b]	Ground Water 4,264,000 acre-feet (1971-1990) Surface Water 2,961,000 acre-feet (1971-1990)
Approximate Acres of Riparian Areas[c]	266,786 acres located on 3,530 miles of perennial streams 165,000 acres located on 10,000 miles of intermittent streams

(a) Arizona Climatological Laboratory, 1994 (verbal communication)

(b) Arizona Department of Water Resources, 1994.

(c) Arizona Game and Fish Department, 1993 (perennial streams), 1997 (intermittent streams).

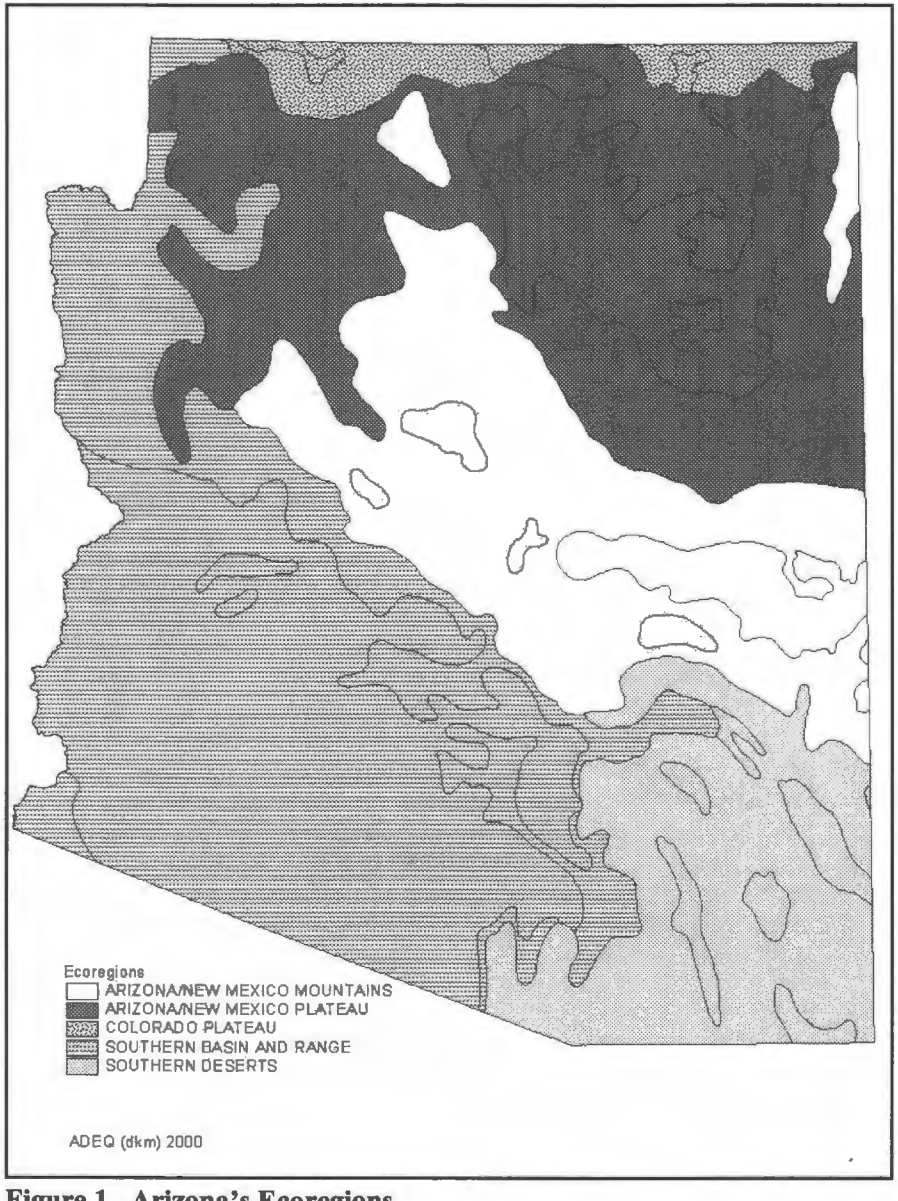


Figure 1. Arizona's Ecoregions

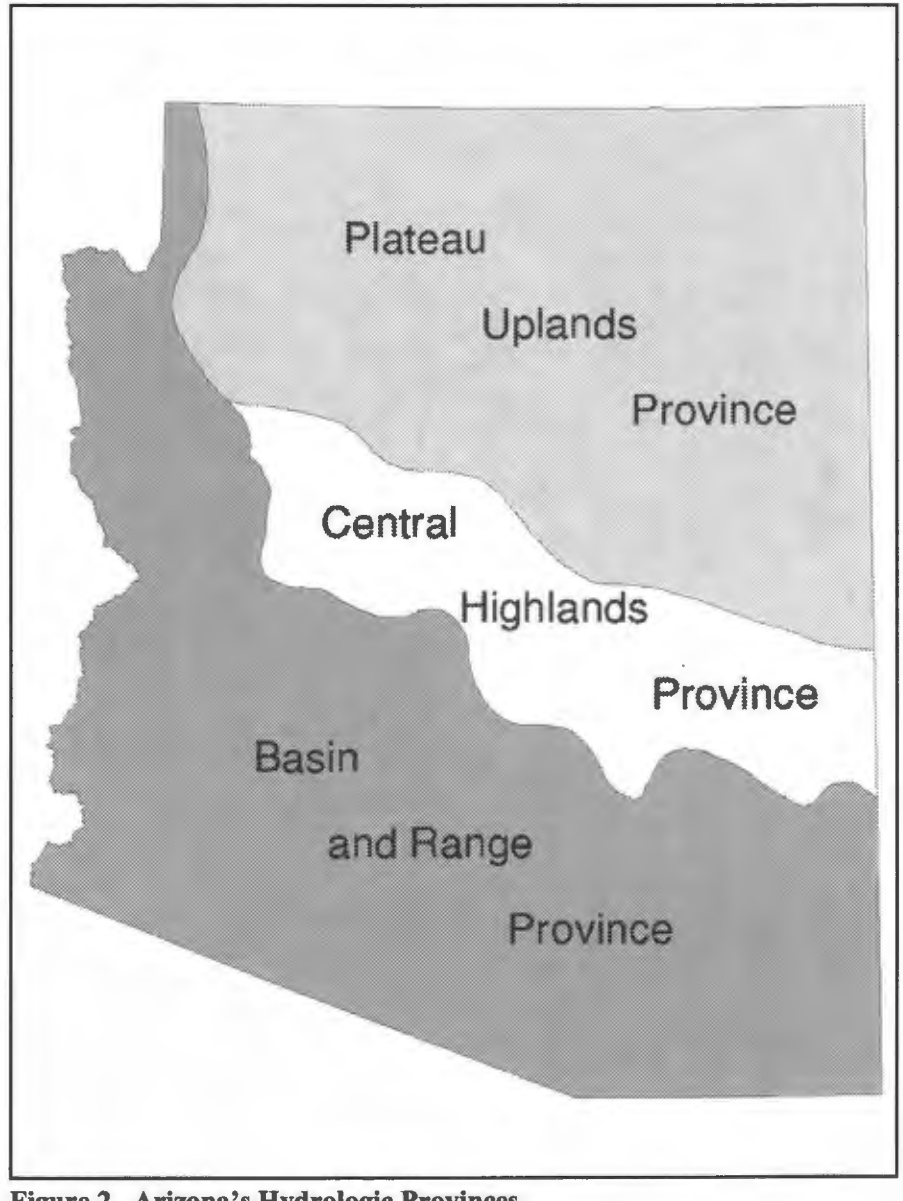


Figure 2. Arizona's Hydrologic Provinces

Land Ownership – Only 17% of the land within Arizona is privately owned, while the remainder is owned by federal and state agencies and Indian Nations **(Table 2 and Figure 3)**. Land ownership can suggest land uses. For example, urban areas of population growth are generally restricted to privately owned lands, and irrigated agriculture primarily is associated with private and Indian lands. On the other hand, some activities such as mining and grazing are widespread across all types of ownership.

A significant part of the state (28%) is owned by Indian Nations **(Table 2 and 3)**. Some of the maps in this report indicate where Tribal lands occur. Although waters on Indian lands are not assessed in this report, these waters are an integral part of the state's water resources. Some of the Indian Nations publish their own water quality assessment reports which should be read in conjunction with this report to understand water quality conditions across Arizona.

Hydrologic Flow and Climate– Many of Arizona's streams are not perennial (do not contain water year round), but instead flow only part of the year (intermittent flow), or only in response to precipitation (ephemeral). An estimate of Arizona's water resources is provided in **Table 2**. A map of streams with perennial flow **(Figure 4)** was created based on riparian area research by the Arizona Game and Fish Department (AGFD 1993 and 1997). This map illustrates generalized conditions but more research is needed in most watersheds to accurately depict hydrologic flow conditions.

The ephemeral and intermittent nature of Arizona's streams is largely due to climatic conditions, particularly precipitation and temperature **(Figure 5 and 6)**. However, ground water pumping, diversions into canals, and the creation of reservoirs has also had a significant influence on the amount of water in Arizona's streams.

Stream Flow Classification

Perennial: Flows continuously throughout the year.

Intermittent: Flows continuously only at certain times of the year, as when it receives water from a spring or from another surface source such as melting snow (i.e., seasonal).

Ephemeral: Channel is at all times above the water tables, and flows only in direct response to precipitation.

A view of the Gila River near Duncan, Arizona in May of 2000 shows a nearly dry stream bed with no flowing water.

A view of the same site in October of 2002 shows a significant amount of flow. These variations are common to most Arizona streams.

Table 3. An Estimate of Arizona's Water Resources

WATERSHED NAME	STREAMS (miles)						LAKES (acres)				Ground water ESTIMATED* STORAGE (acre-feet)
	Non-Indian Land			Indian Land			Non-Indian Land		Indian Land		
	Perennial	Intermittent	Ephemeral	Perennial	Intermittent	Ephemeral	Perennial	Non-perennial	Perennial	Non-perennial	
Bill Williams	185	655	5035	0	0	0	1,832	11,950	0	0	32,500,000
Colorado-Grand Canyon	480	260	14,870	125	5	3,740	68,398	13,412	389	0	509,500,000
Colorado-Lower Gila	375	145	13,545	75	0	535	36,866	0	244	0	272,300,000
Little Colorado-San Juan	640	1,655	9,635	305	170	15,310	16,051	6,831	5,295	118	413,000,000
Middle Gila	165	1,210	5,460	0	10	1,105	10,318	55,746	240	0	222,410,000
Salt	510	1,190	2,785	825	0	4,275	25,544	0	1,858	0	***
San Pedro-Willcox-Yaqui	195	665	6,610	0	0	6,395	1,319	29,471	0	0	112,000,000
Santa Cruz-Magdalena-Sonoyta	85	500	7,245	0	20	35	1,366	0	926	0	176,900,00**
Upper Gila	445	970	6,305	105	50	3,795	2,289	0	9,523	11,119	66,300,000**
Verde	450	2,115	5,990	15	5	230	4,603	3,636	6	0	29,550,000
STATE TOTAL	3,530	9,365	77,480	1,450	260	35,420	168,586	121,046	18,481	11,237	***
	Total on Non-Indian 90,375			Total on Indian 37,130			Total on Non-Indian 289,632		Total on Indian 29,718		
	Total miles in Arizona 127,505						Total acres in Arizona 319,350				

Stream miles and lake acres are based on USGS digitized hydrology at 1:100,000, and have been rounded to the nearest five miles. Reservoir acres along the Colorado River include only the acres within Arizona. Waters include manmade reservoirs and ponds of any size. Ground water estimates of supply come primarily from Arizona Department of Water Resources, with some estimates from US Geological Survey.

Non-perennial lake acres include ephemeral lakes, playas, and storm water retention areas that have been specifically named as a surface water in Arizona's surface water quality standards.

* Estimates to 1200 feet below ground surface (acre-feet).

** Indicates that no estimate is available for one or more ground water basins in the watershed.

*** Indicates insufficient data to make an estimate.

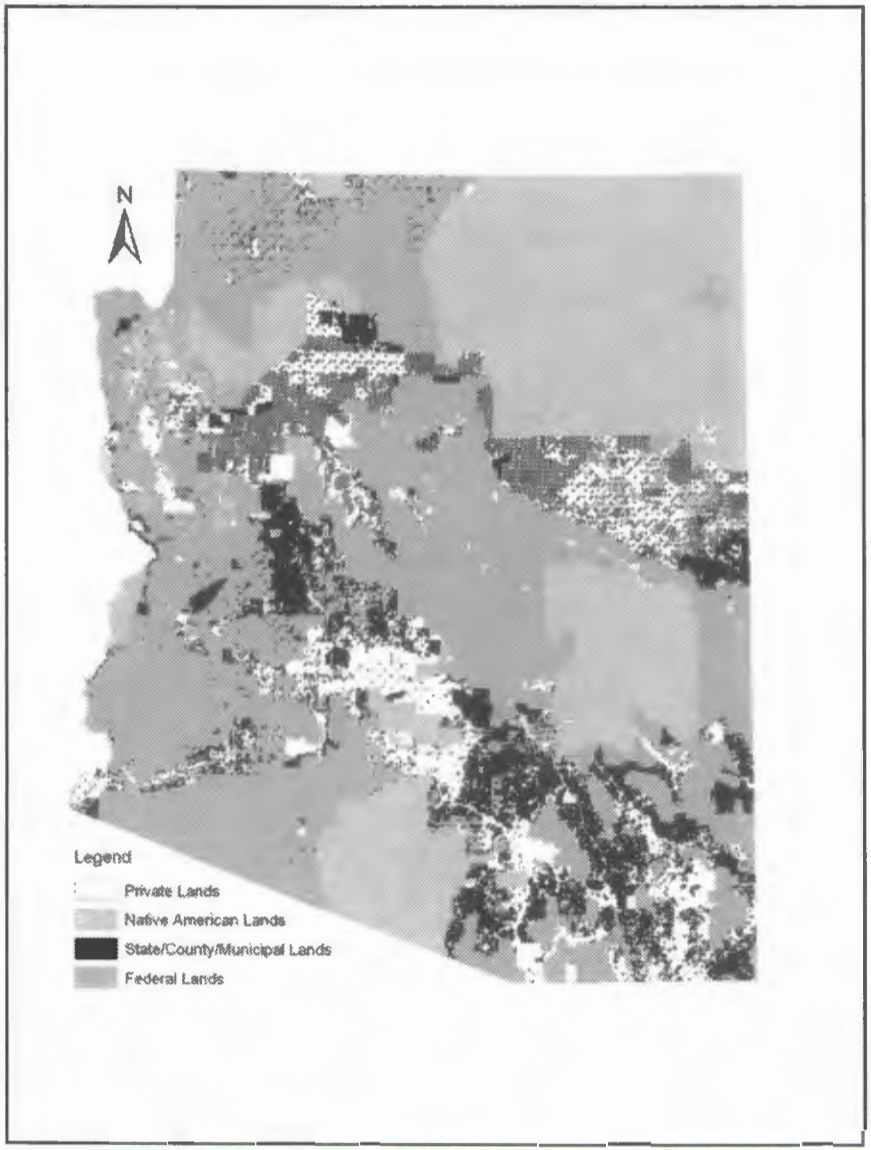


Figure 3. Land Ownership in Arizona

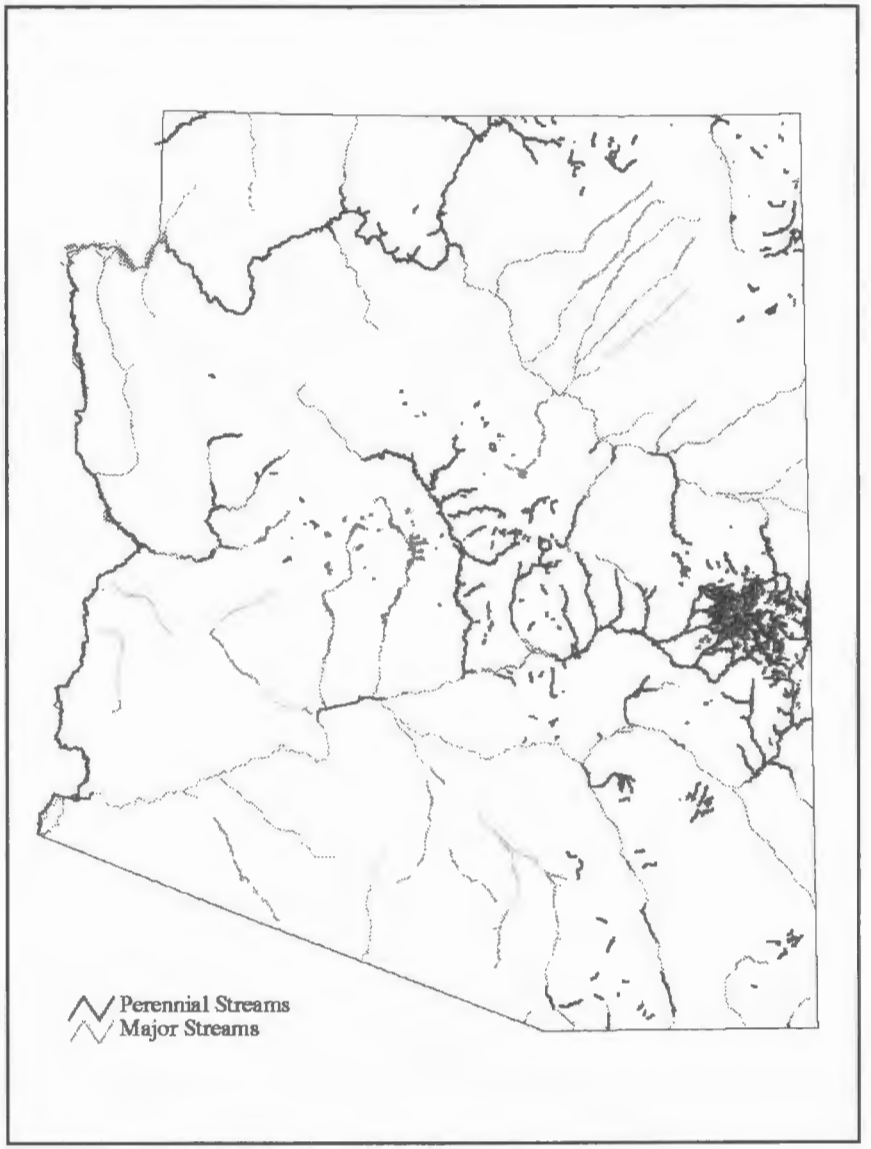


Figure 4. Perennial Streams in Arizona

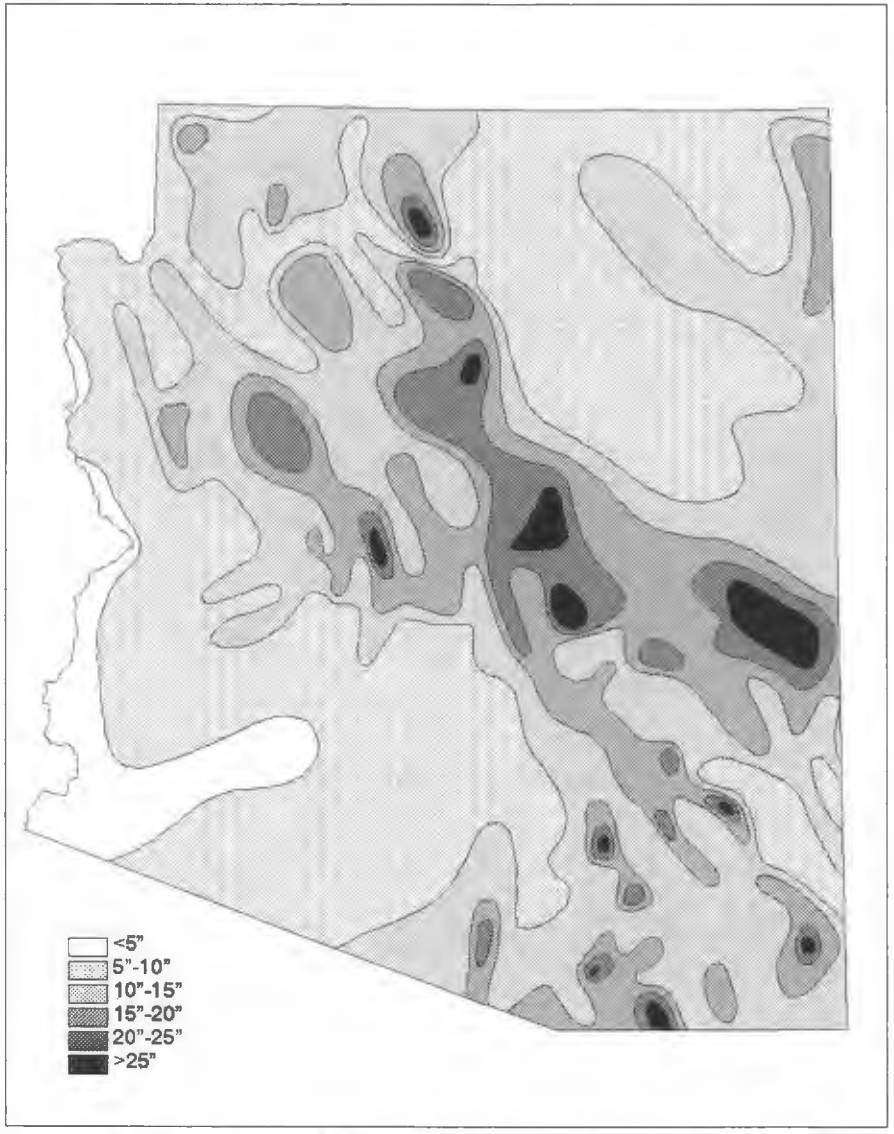


Figure 5. Mean Annual Precipitation Distribution in Arizona

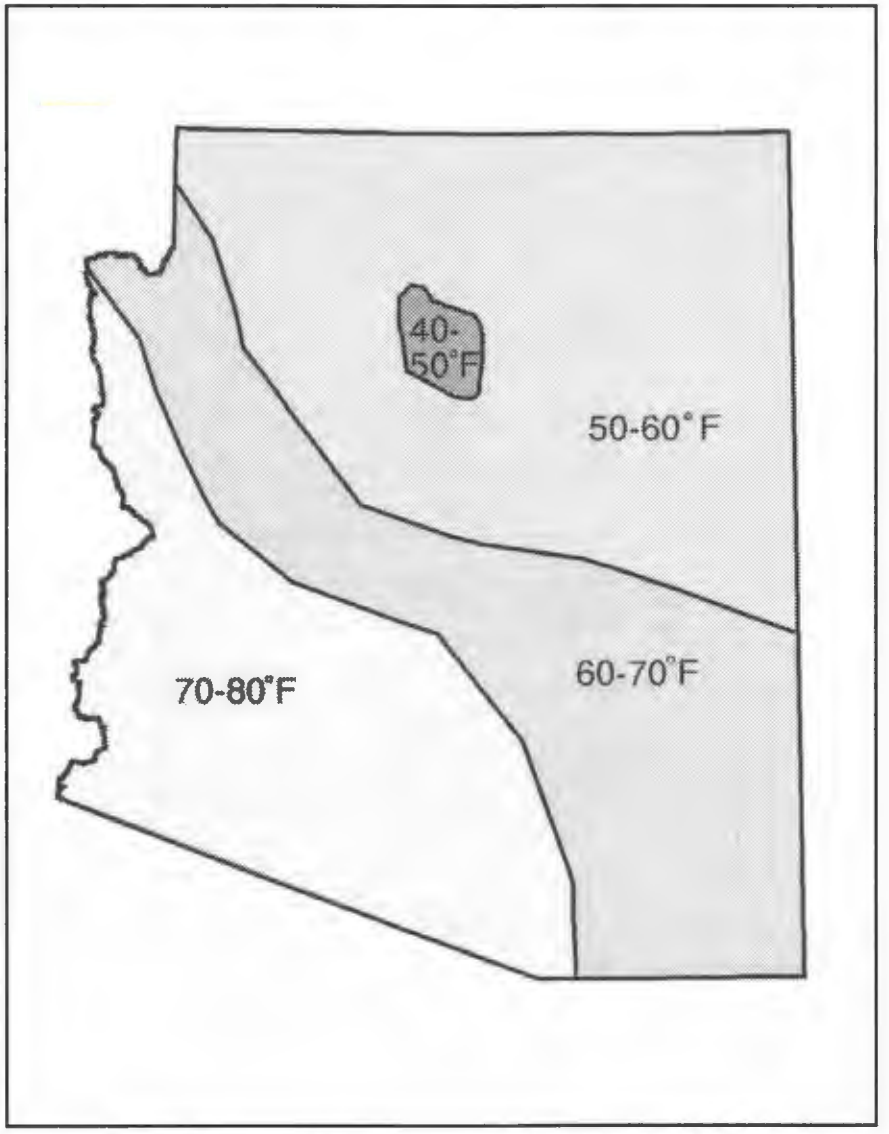


Figure 6. Mean Annual Temperature Distribution in Arizona

Watersheds, hydrologic unit areas, and basins

To manage water quality and quantity concerns, this large and diverse state has been subdivided into surface water hydrologic unit areas, basins, watersheds, ground water basins, and Active Management Areas. These areas are delineated hydrologically rather than politically (e.g., counties, cities, ownership), because water quality and quantity concerns are largely determined by drainage and hydrological flows. Water quality issues do not end at a political boundary.

- **Hydrologic unit areas** – The U.S. Geological Survey divided and subdivided the United States into drainage areas or surface water hydrologic units. Each drainage area was assigned a unique code number, an eight digit Hydrologic Unit Code (HUC) **(Figure 7, including table)**.

> **A HUC divided –** One HUC (15060106) was divided at Granite Reef Dam because diverting all of the surface water flow from the Salt River into canals makes the western half of this HUC more closely hydrologically interconnected with the Middle Gila Basin than the Salt River Basin.

- **Surface water basins** – ADEQ grouped the 84 HUCs in Arizona into 13 Surface Water Basins **(Figure 8)** based on hydrologic relationships defined by the HUC numbering system. These surface water basins are used to organize surface waters in Arizona's surface water standards.

- **Watersheds** – ADEQ also used the HUCs to organize the state into 10 Watersheds **(Figure 9)**. These watersheds were developed to synchronize ADEQ activities within a geographic area such as focused monitoring and surface water permit issuance, and to foster local stakeholder interest and involvement in water quality concerns (see discussion in Chapter III and Volume II). As shown by comparing **Figure 8 and Figure 9**, most Watersheds and Surface Water Basins are similar; however, three watersheds were created by combining basins and one basin (the Colorado River) was split into two watersheds. These new delineations were made to facilitate watershed management group meetings, and considered probable shared water quality concerns, shared land uses, and geographical proximity.

Assessment information throughout this report is organized by watershed to facilitate stakeholder involvement in water quality concerns. However, specific water quality improvement efforts are generally addressed at a smaller drainage or sub-watershed scale.

- **Ground water basins and Active Management Areas** – ADEQ adopted the ground water basins and Active Management Areas created by the Arizona Department of Water Resources to manage ground water quantity and quality concerns. The delineation of ground water areas was based on physiography, surface drainage patterns, subsurface geology, and aquifer characteristics. These basins do not delineate aquifers in Arizona. Because surface water drainage patterns were considered in delineating ground water basins, most basins fit inside a watershed **(Figure 10).**

Some ground water quality studies and most remedial actions are conducted in a smaller area such as an aquifer or a sub-basin based on sources of contamination.

> **Three Levels of Ground Water Management**
>
> The Arizona Ground Water Management Code administered by the Arizona Department of Water Resources establishes that ground water basins may be classified under two special levels of water quantity management:
> **The Active Management Areas** (AMAs) – Four ground water basins have been designated as AMAs due to severe overdraft of ground water. The goal in these areas is to achieve "safe-yield" by 2025. The availability of non-ground water supplies to support future growth is an important issue in these areas although ground water will continue to be a necessary part of the water supply.
> **Irrigation Non-Expansion Areas** (INAs) – Irrigation is restricted within these ground water basins.
> **Regional Water Supply Agencies** – These are replenishment districts that are expected to acquire and facilitate delivery of water supplies to reduce ground water overdraft and replenish aquifers.

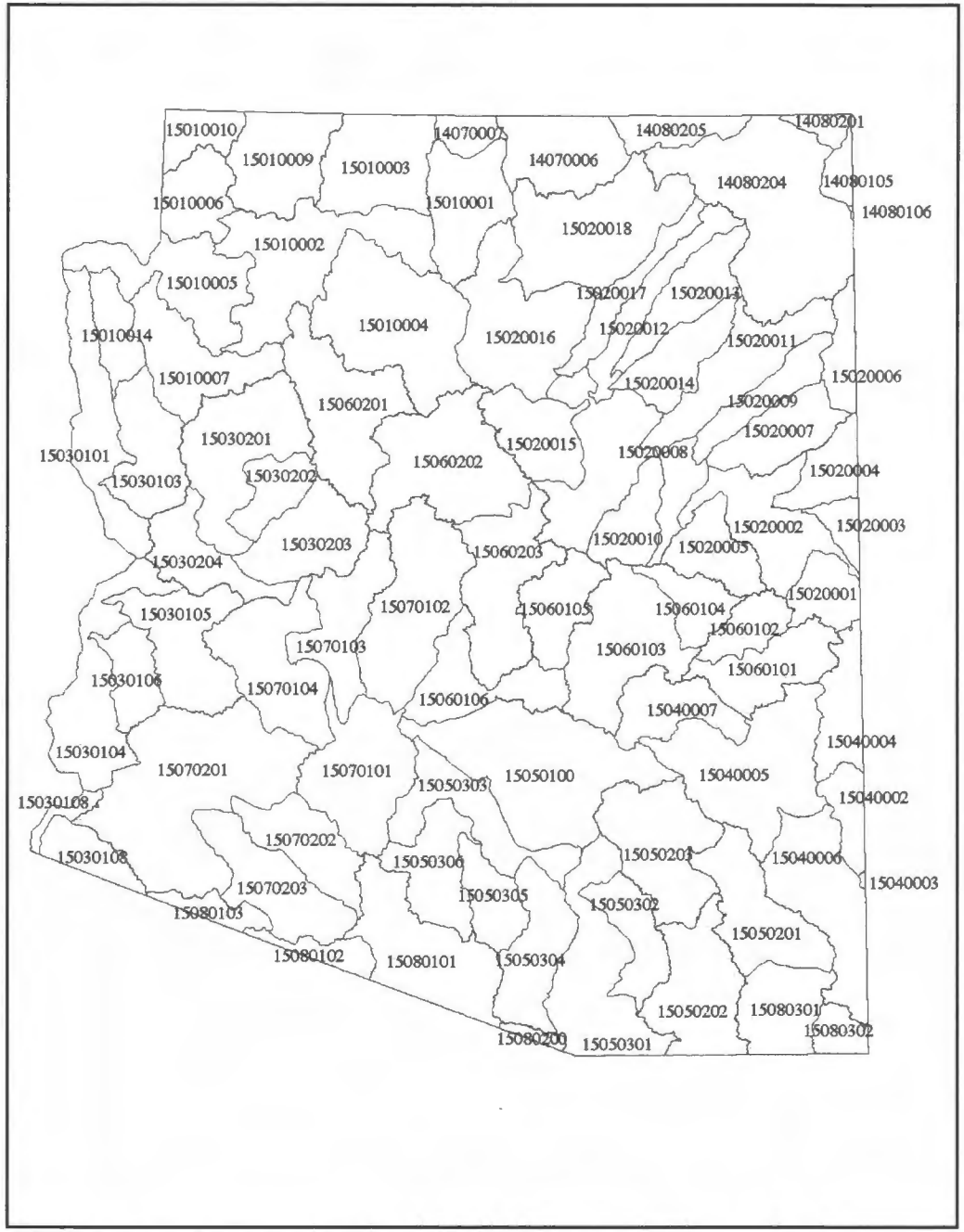


Figure 7. Hydrologic Unit Code (HUCs) Areas in Arizona

Names for the Eight-Digit Hydrologic Unit Code (HUC) Drainage Areas (for Figure 7)

HUC	NAME	WATER	HUC	NAME	WATER	HUC	NAME	WATER	HUC	NAME	W
15030201	Big Sandy	BW	15030108	Colorado (Yuma-Mexico)	CLG	15020014	Jadito Wash	LCR/SJ	15080101	San Simon Wash	SC/RIOS
15030202	Burro Creek	BW	15070201	Lower Gila	CLG	15020015	Diablo Canyon	LCR/SJ	15080102	Sonoyta Valley	SC/RIOS
15030203	Santa Maria River	BW	15070202	Tenmile Wash	CLG	15020016	Moenkopi Wash	LCR/SJ	15080103	Quitobaquito	SC/RIOS
15030204	Alamo Lake-Bill Williams	BW	15070203	San Cristobal	CLG	15020017	Dinnebito Wash	LCR/SJ	15080200	Rio Magdalena	SC/RIOS
14070006	Lake Powell	CGC	14080105	Chaco River	LCR/SJ	15050100	Gila (Coolidge Dam-Salt River)	MG	15050201	Willcox Playa	SP/WP/RY
14070007	Paria River	CGC	14080106	Sansotee Wash	LCR/SJ	15060106B	Salt (below Granite Reef Dam)	MG	15050202	Upper San Pedro	SP/WP/RY
15010001	Marble Canyon	CGC	14080201	San Juan	LCR/SJ	15070101	Gila (Salt River-Painted Rocks Dam)	MG	15050203	Lower San Pedro	SP/WP/RY
15010002	Grand Canyon	CGC	14080204	Chinle Valley	LCR/SJ	15070102	Agua Fria River	MG	15080301	Whitewater Draw	SP/WP/RY
15010003	Kanab Creek	CGC	14080205	Monument Valley	LCR/SJ	15070103	Hassayampa River	MG	15080302	Blackwater Draw	SP/WP/RY
15010004	Havasu Canyon	CGC	15020001	Upper Little Colorado (LCR)	LCR/SJ	15070104	Centennial Wash	MG	15040002	Upper Gila	UG
15010005	Lake Mead	CGC	15020002	LCR (Lyman-Puerco)	LCR/SJ	15060101	Black River	SALT	15040003	Arimas Valley	UG
15010006	Grand Wash	CGC	15020003	Carrizo Wash	LCR/SJ	15060102	White River	SALT	15040004	San Francisco River	UG
15010007	Truxton Wash	CGC	15020004	Zuni River	LCR/SJ	15060103	Roosevelt Lake	SALT	15040005	Gila Valley	UG
15010009	Fort Pierce Wash	CGC	15020005	Silver Creek	LCR/SJ	15060104	Carrizo Creek	SALT	15040006	San Simon Creek	UG
15010010	Virgin River	CGC	15020006	Upper Puerco River	LCR/SJ	15060105	Tonto Creek	SALT	15040007	San Carlos River	UG
15010014	Detrital Wash	CGC	15020007	Lower Puerco River	LCR/SJ	15060106A	Salt River (Roosevelt-Granite Reef)	SALT	15060201	Chino Valley	VD
15030101	Colorado (Hoover-Parker Dam)	CLG	15020008	LCR (Puerco-Dinnebito)	LCR/SJ	15050301	Upper Santa Cruz	SC/RIOS	15060202	Verde Valley	VD
15030103	Sacramento Wash	CLG	15020009	Leroux Wash	LCR/SJ	15050302	Pantano Wash	SC/RIOS	15060203	Lower Verde River	VD
15030104	Colorado (Parker-Imperial Dam)	CLG	15020010	Chevelon Canyon	LCR/SJ	15050303	Lower Santa Cruz	SC/RIOS			
15030105	Bouse Wash	CLG	15020011	Pueblo Colorado	LCR/SJ	15050304	Altar and Avra Valleys	SC/RIOS			
15030106	Tyson Wash	CLG	15020012	Orabi Wash	LCR/SJ	15050305	Aquirre Valley	SC/RIOS			
15030107	Colorado (Imperial-Yuma)	CLG	15020013	Polacca Wash	LCR/SJ	15050306	Santa Rosa Wash	SC/RIOS			

WATER = Watersheds; BW = Bill Williams, CGC = Colorado Grand Canyon, CLG = Colorado-Lower Gila, LCR/SJ = Little Colorado-San Juan, MG = Middle Gila, SALT = Salt, SC/RIOS = Santa Cruz-Rio Magdalena-Rio Sonoyta, SP/WP/RY = San Pedro-Willcox Playa-Rio Yaqui, UG = Upper Gila, VD = Verde

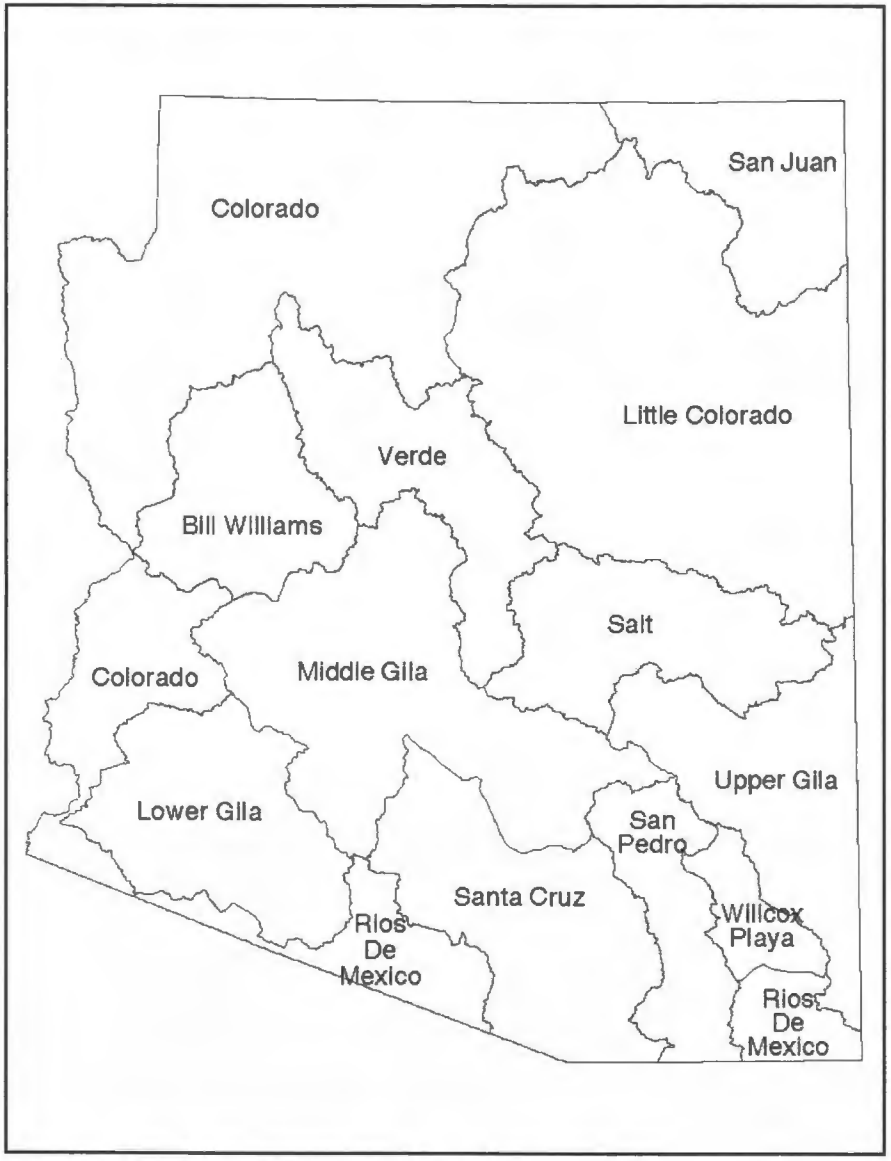
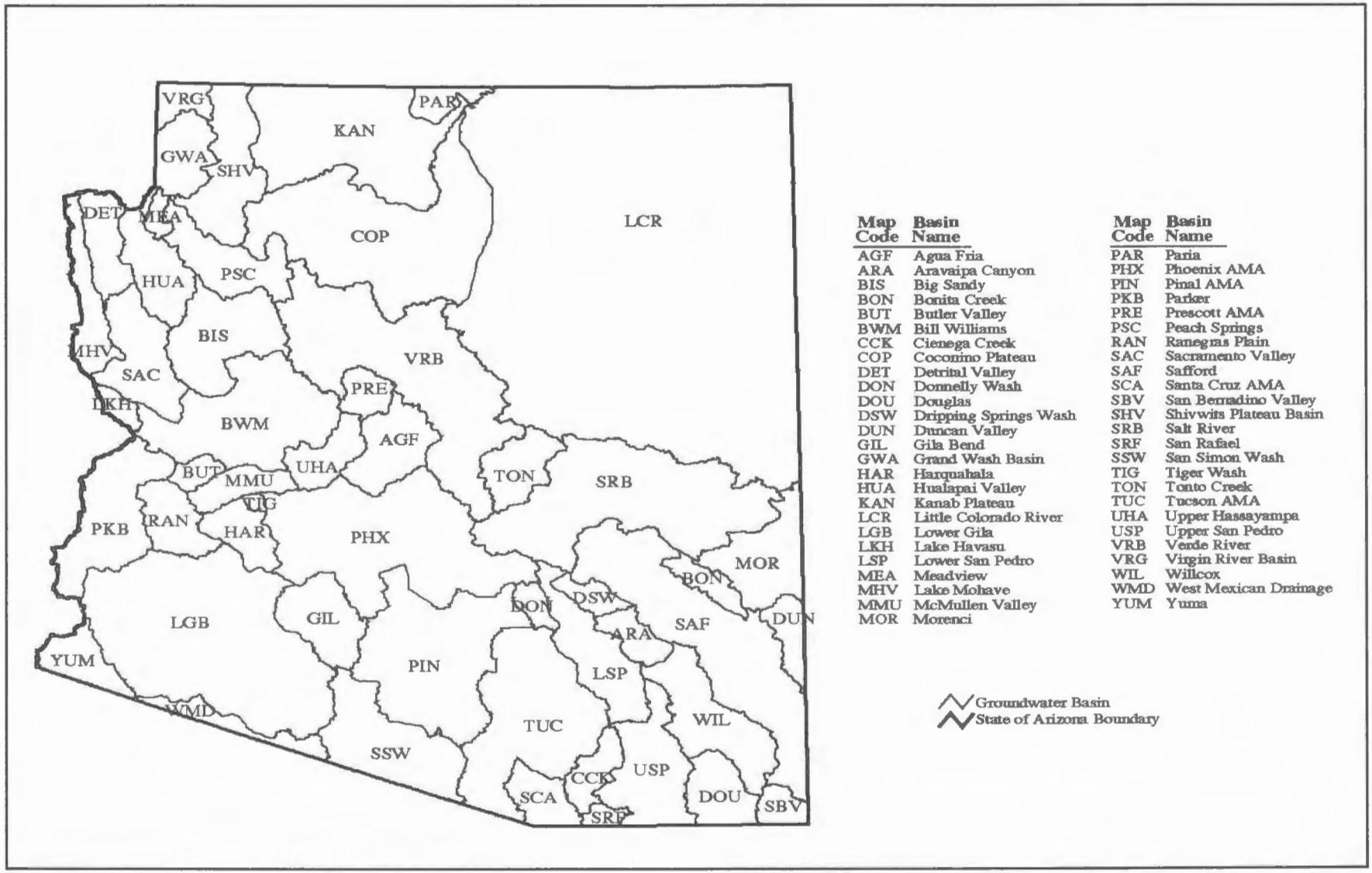


Figure 8. Arizona's Surface Water Basins

Figure 9. Arizona's Watersheds



Map Code	Basin Name
AGF	Agua Fria
ARA	Aravaipa Canyon
BIS	Big Sandy
BON	Bonita Creek
BUT	Butler Valley
BWM	Bill Williams
CCK	Cienega Creek
COP	Coconino Plateau
DET	Detrital Valley
DON	Donnelly Wash
DOU	Douglas
DSW	Dripping Springs Wash
DUN	Duncan Valley
GIL	Gila Bend
GWA	Grand Wash Basin
HAR	Harquahala
HUA	Hualapai Valley
KAN	Kanab Plateau
LCR	Little Colorado River
LGB	Lower Gila
LKH	Lake Havasu
LSP	Lower San Pedro
MEA	Meadview
MHV	Lake Mohave
MMU	McMullen Valley
MOR	Morenci

Map Code	Basin Name
PAR	Paria
PHX	Phoenix AMA
PIN	Pinal AMA
PKB	Parker
PRE	Prescott AMA
PSC	Peach Springs
RAN	Ranegras Plain
SAC	Sacramento Valley
SAF	Safford
SCA	Santa Cruz AMA
SBV	San Bernadino Valley
SHV	Shivwits Plateau Basin
SRB	Salt River
SRF	San Rafael
SSW	San Simon Wash
TIG	Tiger Wash
TON	Tonto Creek
TUC	Tucson AMA
UHA	Upper Hassayampa
USP	Upper San Pedro
VRB	Verde River
VRG	Virgin River Basin
WIL	Willcox
WMD	West Mexican Drainage
YUM	Yuma

Figure 10. Ground Water Basins in Arizona

III. How are Water Quality Assessments Performed?

The assessment process

A surface water is assessed based on all readily available, credible, and scientifically defensible monitoring data and information pertaining to possible numeric and narrative standards violations. Each designated use is assessed, and these assessments are combined to provide an overall water quality assessment and to determine whether the Department needs to take further actions.

In assessing surface water quality there is always a risk of concluding that a surface water is impaired when it is not, or concluding that a surface water is attaining its uses when it is actually impaired. Either of these errors involves a cost. Concluding that a surface water is impaired when it is not results in a use of resources that should be utilized elsewhere. Concluding that a surface water is not impaired when it actually is allows environmental degradation and human health threats to persist. The Impaired Water Identification Rule (A.A.C. R18-11-601 through 606) was developed to reduce both of these errors by providing a comprehensive and statistically sound method for listing a surface water.

The rest of this section describes the details of the assessment process.

Data Conflicts and Weight-of-evidence Assessments – The assessment process considers multiple environmental indicators. Each type of data (e.g., biological, toxicological, physical, and chemical) provides its own insights into the integrity and health of an aquatic system and the ability of the public to safely recreate in or use such waters. Each type of data also has different strengths and limitations. For example, chemical water samples generally evaluate and predict impacts from single pollutants, but do not capture the combined interactions of pollutants or cumulative impacts over time. Some chemicals may be found in high levels in fish tissue or sediments while available laboratory methods cannot detect their presence in the water column.

To make an assessment, apparent data conflicts must be resolved. Arizona uses a "weight-of-evidence" approach in completing assessments. The strengths and limitations of each data set are considered, looking at all of the data and exceedances in context with relevant information such as soil type, geology, hydrology, flow regime, geomorphology, natural processes, potential anthropogenic influences, characteristics of the stressors, age of the data, monitoring techniques, sampling plan, and climate.

Although multiple lines of evidence are desirable, only one line of water quality evidence may be sufficient to demonstrate that the surface water or segment is impaired or not attaining its uses.

Data or information collected during critical conditions may be considered separately from the complete dataset. A surface water may be impaired only during critical conditions such as high or low stream flow, weather conditions, or anthropogenic activities in the watershed, even though it is attaining standards during all other conditions.

Data Collection and Review – For this assessment, ADEQ reviewed all readily available surface water quality data collected during the five-year period beginning January 1998 through December 2002. Data were requested from all federal and state agencies who routinely collect water quality data, including water chemistry, sediment contamination, bioassessments, fish tissue, fish kills, weed harvesting, and physical habitat information. EPA's STORET database was queried. (STORET is EPA's storage and retrieval system for housing surface water data from federal and state agencies.) The assessment team also made an effort to track down all surface water quality data collected through permit compliance, remediation, and enforcement programs within this agency, from universities, and from volunteer monitoring programs.

Data Quality Assurance -- Data used in assessment and listing must be evaluated to determine whether they meet the credible data requirements outlined in the Impaired Water Identification Rule (A.A.C. R18-11-602). To assure that the data are credible and relevant, all water quality data are collected using a suitable Quality Assurance Plan (QAP) and site-specific Sampling and Analysis Plan (SAP) or equivalent planning documents. Chemical and toxicological samples must be analyzed in a state-licensed laboratory, federal laboratory, or other laboratory that can demonstrate procedures that are substantially equal to those required by the Arizona Department of Health Services and use methods identified in A.A.C R9-14-610 or 40 CFR Part 136.

QAPs and SAPs

A **Quality Assurance Plan** details how environmental data collection and analyses are planned, implemented, and assessed for quality during the monitoring project.

A **Sampling and Analysis Plan** describes where, why, and how samples are to be collected to ensure that data quality objectives are met and that samples are spatially and temporally representative of surface water conditions.

These requirements apply to all data used in this assessment. Quality Assurance Plans (QAP) and Sampling and Analysis Plans (SAP) must specify the use of accepted field and laboratory methods by adequately trained staff. ADEQ has QAPs and associated SAPs for each of its monitoring programs that are available for reference by other monitoring entities and the public.

Adequate training of field and laboratory personnel is essential. ADEQ, in conjunction with Arizona Department of Health Services and Gateway Community College, provides classes in field monitoring techniques. Several other community colleges and universities also offer classes in environmental sampling techniques.

The data are reviewed for accuracy and to determine whether all data points are valid. Questionable data are flagged and eliminated from the assessment process unless they can be validated.

Some data were included in the monitoring tables that did not meet the credible data requirements. As noted in the tables, these data were not used for the final assessments, but have been included as reference information.

Data Tracking -- Surface and ground water data are stored in ADEQ's Water Quality Database and uploaded to the federal STORET database. Data uploaded to the STORET database can be queried on the internet at: http://www.epa.gov/STORET. ADEQ's Oracle based system is the repository of all water chemistry data collected by ADEQ and by other monitoring entities under contract by ADEQ. Eventually, all water quality data used in assessments will be stored in this database.

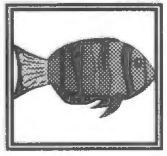
The groundwater portion of the database provides a comprehensive repository for well location information, well construction details, field measurement data (e.g., aquifer water levels), field observations (e.g., borehole geology), and water quality sampling results. The surface water portion stores sampling site information, field observations and measurements, and water quality sampling results. Further information concerning the Oracle database can be obtained by calling Wayne Hood, Data Management and Analysis Section Manager at (602) 771-4427.

Do all waters have to meet the same standards?

Standards and Designated Uses -- Arizona sets narrative and numeric surface water standards for water quality based on the uses people and wildlife make of the water. These "designated uses" are specified in the standards for individual surface waters, or if the surface water is not listed in the rule, the designated uses are determined by the tributary rule. Surface waters have multiple designated uses, while aquifers are protected for drinking water use, unless specifically reclassified. Water quality is judged acceptable or impaired based on standards established to protect each designated use.

Designated Use Classification -- Six groups of designated uses can be applied to surface waters. All bodies of water regulated by these standards (except canals) are protected for aquatic and wildlife uses and recreation in or on the water (either Full Body and Fish Consumption or Partial Body Contact).

Aquatic and Wildlife. Four categories of aquatic and wildlife protection have been established. All surface waters, except canals, have one of these:

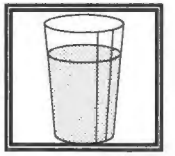


Warmwater aquatic community (A&Ww),
Coldwater aquatic community (A&Wc),
Effluent dependent water (A&Wedw),
Ephemeral flow (A&We).
Aquatic and Wildlife criteria (except for A&W ephemeral) are also divided into acute criteria (established based on short exposures) and chronic criteria (established based on long-term or life-time exposures.)

Full Body Contact (FBC) or **Partial Body Contact** (PBC) criteria were established to maintain and protect water quality for activities such as swimming, water skiing, boating, and wading. The FBC criteria are to protect public health when people engage in full immersion in the water and potential ingestion. The PBC criteria are to protect people who engage in water-based recreation where full immersion and ingestion of the water are unlikely (wading, fishing, boating).

Fish Consumption (FC) water quality criteria were established to protect human health from pollutants which may bioaccumulate in aquatic organisms (e.g., fish, turtles, crayfish) and be consumed by people.

Domestic Water Source (DWS) criteria are applied to surface water that is used as a raw water source for drinking water supply. The criteria were developed assuming that conventional water treatment (disinfection and filtration) would be needed to yield water suitable for human consumption.



Agriculture Irrigation (AgI) criteria were established to protect water used for irrigating crops.

Agriculture Livestock Watering (AgL) criteria were established to safeguard water used for consumption by livestock.

Narrative Standards – Narrative surface water standards (A.A.C. R18-11-108) were established to protect water quality when a numeric standard is not available or is insufficient (**Appendix C**). The new state TMDL statute requires development of narrative implementation procedures before narrative standards can be applied to 303(d) listing decisions. Several of these documents are under development but were not available for this assessment.

What changes have been made since the last assessment in 2002?

Surface water standards are reviewed and revised on a three-year cycle. These standards are established in Arizona Administrative Code (A.A.C.) R18-11-101 through R18-11-123 plus appendices. Ground water standards (A.A.C. R18-11-401 through R18-11-506) are revised as new drinking water protection standards are adopted.

Most of the changes in assessments were a result of the adoption of new surface water standards in 2002. These standards did not go into effect until after completion of the 2002 assessment, so this assessment is the first to use these new standards. The other significant change was the application of chronic standards for the Aquatic and Wildlife designated use. These changes are described below. The surface and ground water quality standards used in this assessment are included in **Appendix C**.

Turbidity and the New SSC Standard – Arizona repealed its turbidity standard in 2002 and adopted a suspended sediment concentration (SSC) standard to protect Aquatic and Wildlife designated uses. Turbidity is a qualitative measure of water clarity or opacity, while SSC is a quantitative measure of suspended solids. These two parameters represent two different ways to measure fine suspended particles such as clay, silt, organic and inorganic matter, plankton, and other microscopic organisms.

Arizona's new numeric suspended sediment concentration criterion is intended to protect fish in streams, with the exception of effluent-dominated streams. It is also not applicable to lakes. Arizona's SSC standard is set at 80 mg/L, expressed as the geometric mean of at least four samples. The new standard is only applicable to samples collected at or near base flow and does not apply to a surface water during or soon after a precipitation event.

To apply this standard for assessment purposes, it is necessary to calculate base flow for each site, which requires a large amount of flow data. Therefore, an assessment of SSC was usually possible only at or near USGS gaging stations, where an abundance of current and historical flow data is available.

At the gage sites, USGS flow data from the last 10 to 30 years, as available, were used to determine what range of flow values represented the stream "at or near base flow." Only SSC data collected within this range were used for the assessment. All SSC data collected at flows higher than this range were not considered. After the SSC data collected at or near base flow were assembled, an annual geometric mean was taken. Any stream with more than one exceedance of the geometric mean was assessed as "impaired" in accordance with the Impaired Water Identification Rule (**Appendix B**). One exceedance was assessed as "inconclusive," and zero exceedances was "attaining."

Since the SSC standard was just recently adopted in 2002, a minimal amount of data were available for this assessment. Thus, ADEQ has continued to assess the turbidity standard repealed in 2002 in an effort to record potential suspended sediment problems. Additionally, these exceedances provide evidence of a potential narrative bottom deposit standard violation. The standard was assessed according to the methods described later in this chapter, and waters were either assessed as "attaining" or "inconclusive" due to turbidity. No 303(d) listings were made based on this parameter, since the standard was repealed. Any waters that would have been impaired or inconclusive under the former standard were called "inconclusive" and placed on the Planning List for further study.

It should be noted that EPA may place those waters that would have been impaired under the former standard on the 303(d) List, also citing the exceedances as evidence of a narrative standard violation. ADEQ cannot make 303(d) listings based on narrative standards violations until narrative standard

implementation procedures are adopted (procedures are currently being developed). A table showing all waters with significant turbidity and/or SSC exceedances appears in Chapter VI.

***Escherichia Coli* and Fecal Coliform Standards** – *Escherichia coli* is now Arizona's indicator of bacteria contamination for all surface waters, totally replacing fecal coliform standards after the 2002 triennial review. Whereas the former fecal coliform standards applied to all designated uses, the current *Escherichia coli* standards apply only to Full and Partial Body Contact uses. The Full Body Contact single sample maximum standard is now 235 colony forming units per 100 milliliters (CFU/100 ml), lower than the previous 580 CFU/100 ml, which resulted in several more waters being identified as "impaired." The Partial Body single sample maximum is set at 576 CFU/100 ml.

The new standards also replaced the application of a 30-day geometric mean (5-sample minimum), with a new four sample minimum geometric mean. The numeric value changed from 130 to 126. The new standard can be applied to any consecutive four samples and is not limited to those collected within 30 days.

The Impaired Water Identification Rule, however, which has not yet been revised since Surface Water Quality Standards changed, requires that listing decisions must be based on a 30-day geometric mean. Therefore, for this assessment the geometric mean standard of 126 could only be applied only when there were sufficient samples to determine a geometric mean within a 30-day period.

Designated Use Revisions – Designated uses were reviewed and several were revised during the last triennial review of Arizona's water quality standards. The predominant change was the result of research completed by ADEQ's Biocriteria Program that showed that aquatic communities change from warmwater to coldwater consistently around the 5,000-foot elevation in Arizona. Based on this research, many streams specifically listed in Arizona's Surface Water Quality Standards for Surface Waters were split: coldwater above the 5,000-foot line (A&Wc) and warmwater (A&Ww) below. (The reach numbers remained the same, except that an "A" was attached to the upper coldwater portion and "B" to the downstream warmwater portion.)

Modifications made to the Tributary Rule (A.A.C. R18-11-105) changed the designated uses assigned to all surface waters not named in Appendix B of the standards. These streams or lakes are no longer assigned Agricultural Irrigation, Agricultural Livestock Watering, or Domestic Water Source uses. The waters are assigned Aquatic and Wildlife, Fish Consumption, and Body Contact uses as follows:

Ephemeral waters are assigned the Aquatic and Wildlife ephemeral and Partial Body Contact uses only.
Perennial and intermittent waters are assigned the Aquatic and Wildlife coldwater use if above 5,000 feet, and warmwater if below 5,000 feet. The Fish Consumption and Full Body Contact uses are assigned to all perennial and intermittent waters.

Changes in Other Standards – A number of other standards were significantly changed by the adoption of the new standards in 2002. Among those, the following changes resulted in several additions or delistings to the 303(d) List or the Planning List:

The beryllium standards for Fish Consumption changed from 0.21 µg/L to 1,130 µg/L;
The fluoride standards to protect Full and Partial Body Contact changed from 8,400 µg/L to 84,000 µg/L;
A new lead standard to protect Full and Partial Body Contact was established at 15 µg/L (no standard previously for these uses);
The manganese standards to protect Full and Partial Body Contact changed from 19,600 µg/L to 196,000 µg/L.

Application of Chronic Standards -- The 2004 assessment is the first to apply chronic standards for the Aquatic and Wildlife designated use using the requirements of the Impaired Water Identification Rule (**Appendix B**, R18-11-605.D.2.b). In accordance with the rule, a surface water is assessed as "impaired" if more than one exceedance of an Aquatic and Wildlife chronic water quality standard occurs. Although a geometric mean of the last four samples must be taken to apply the standard for enforcement purposes, the Impaired Water Identification Rule requires only two exceedances to be placed on the 303(d) List, with no minimum sample size or application of a geometric mean.

Acute and Chronic Standards

Some water quality parameters have both an "acute" and a "chronic" standard (**Appendix C**). Acute standards are set at higher concentrations than chronic standards, to protect aquatic life and wildlife from severe short-term exposure to the parameter of concern. Chronic standards are set at lower concentrations than acute standards, to protect aquatic life and wildlife from long-term, lower-level exposure.

Do some waters have special standards to meet?

Unique Waters Classification and Antidegradation Standards – A Unique Water is a surface water classified by ADEQ as an outstanding state resource water (as prescribed in A.A.C. R18-11-112). Twenty streams have been established as Unique Waters in Arizona **(Figure 11)**.

ADEQ may classify a surface water as a unique water through the rule making process if it meets one of the following criteria:

The surface water is of exceptional recreational or ecological significance because of its unique attributes, including but not limited to attributes related to the geology, flora, fauna, water quality, aesthetic values, or wilderness characteristics of the surface water, or

Threatened or endangered species are known to be associated with the surface water and existing water quality is essential to the maintenance and propagation of a threatened or endangered species, or the surface water provides critical habitat for a threatened or endangered species.

Public comments in support or opposition to a Unique Waters nomination are considered by the Department in making the decision on classifying a water as meeting one or both of these criteria.

Unique waters are given more stringent surface water quality protections than other surface waters under the state's antidegradation rule A.A.C. R18-11-107(D). Under antidegradation implementation procedures, activities that may result in a new or expanded discharge of pollutants to Unique Water (or its tributaries) are prohibited if the discharge would cause degradation of existing water quality. Discharges include those caused by land use activity (e.g., construction, mining, grazing, agriculture) as well as discharges requiring a surface water discharge permit (e.g., wastewater treatment plant discharge, adit, dredge and fill activity).

Additional, more stringent, numeric standards can be specified for Unique Waters. These site specific standards are listed in the surface water standards (A.A.C. R18-11-112).

Effluent Dependent Water – ADEQ classifies some waters as effluent dependent waters **(Figure 12)**. These surface waters would be ephemeral, except for the discharge of treated effluent. Designated uses are limited to Aquatic and Wildlife effluent dependent water, Partial Body Contact, and in some places Agriculture Livestock Watering.

Arizona has developed specific Aquatic and Wildlife effluent dependent water (A&Wedw) standards for bacteria, water temperature, dissolved oxygen, and acute and chronic toxic chemical criteria **(Appendix C)**. In general, these standards are less stringent than other Aquatic and Wildlife designated uses due to the limited species of aquatic life that these waters can support. The exception is *Escherichia coli*, which is more stringent because of the likelihood of pathogens in wastewater.

Moderating Provisions – Dischargers have the opportunity to establish a "mixing zone" or "variance" through the NPDES/AZPDES permit process. These moderating provisions provide an alternate standard for the surface water. A mixing zone is a prescribed area or volume of surface water where initial dilution of the discharge takes place. A mixing zone can only be established if there is adequate water for dilution; therefore it cannot be applied to an ephemeral drainage.

ADEQ can also grant a pollutant specific variance for a point source discharge for up to five years where:
1) The permittee demonstrates that the treatment is more advanced than the technology-based effluent limitations needed to comply with the water quality standards, but it is not technically feasible to achieve this level of treatment within the next five years, or the cost of such treatment would result in unacceptable social and economic impacts.
2) Human-caused conditions or sources of pollution prevent attainment of the water quality standard and cannot be remedied within the next five years.

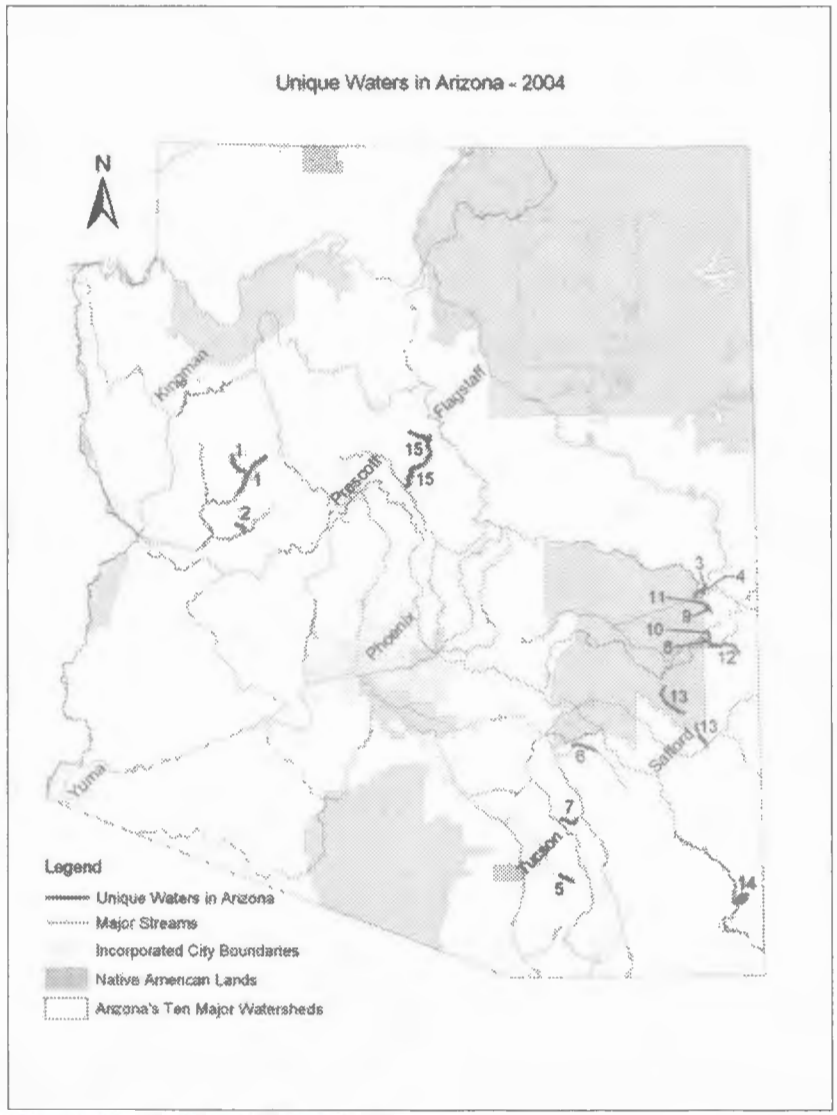


Figure 11. Unique Waters in Arizona

Map #	Stream Names and Reaches	ID Numbers
1	Burro Creek – above confluence with Boulder Creek	AZ15030202-011 AZ15030202-009 AZ15030202-008
1	Francis Creek -- in Mohave and Yavapai Counties	AZ15030202-012
2	Peeples Canyon Creek – tributary to the Santa Maria River	AZ15030203-524
3	Little Colorado River, West Fork of the Little Colorado – above Government Springs	AZ15020001-013A
4	Lee Valley Creek -- headwaters to Lee Valley Reservoir	AZ15020001-232A
5	Cienega Creek -- Gardner Canyon to USGS gage station (Pantano Wash)	AZ15050302-006B
6	Aravaipa Creek – Stowe Gulch to downstream boundary of Aravaipa Canyon Wilderness Area	AZ15050203-004B
7	Buehman Canyon Creek -- headwaters to 9.8 miles downstream	AZ15050203-010A
8	Bear Wallow Creek -- headwaters to San Carlos Indian Reservation	AZ15060101-023
8	Bear Wallow Creek, North and South Forks	AZ15060101-022 AZ15060101-258
9	Hay Creek -- headwaters to West Fork of Black River	AZ15060101-353
10	Snake Creek -- headwaters to Black River	AZ15060101-045
11	Stinky Creek -- Fort Apache Indian Reservation to West Fork of the Black River	AZ15060101-352A
12	KP Creek -- headwaters to Blue River	AZ15040004-029
13	Bonita Creek -- tributary to the upper Gila River	AZ15040005-032 AZ15040005-030
14	Cave Creek and South Fork of Cave Creek -- headwaters to Coronado National Forest boundary	AZ15040006-852A AZ15040006-849
15	Oak Creek, including West Fork of Oak Creek	AZ15060202-019 AZ15060202-018 AZ15060202-017 AZ15060202-016 AZ15060202-020

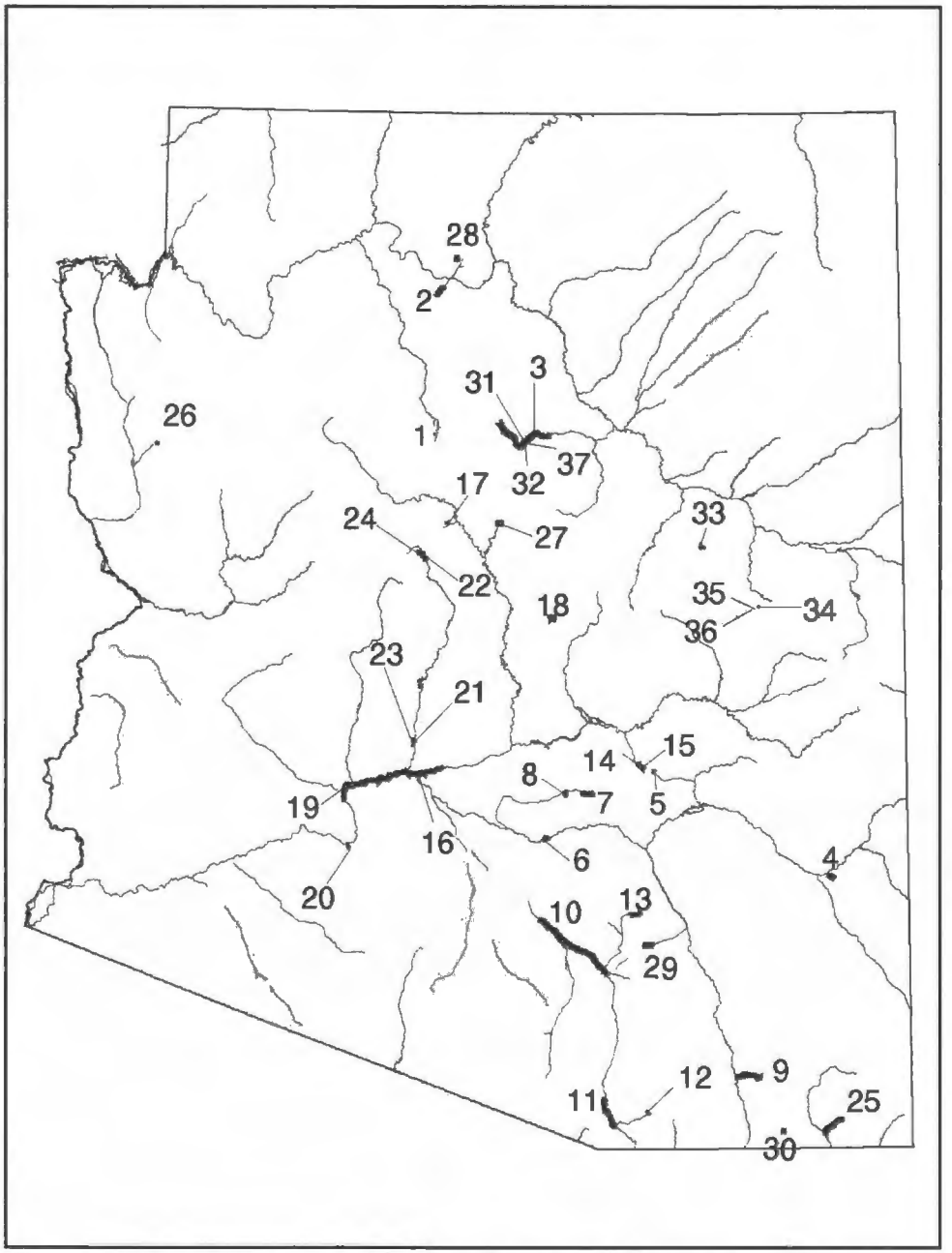


Figure 12. Effluent Dependent Waters in Arizona (see table on next page for corresponding waterbody names)

Effluent Dependent Waters in Arizona (for Figure 12)

Map #	Surface Water Name and Wastewater Treatment Plant (WWTP)	Map #	Surface Water Name and Wastewater Treatment Plant (WWTP)	Map #	Surface Water Name and Wastewater Treatment Plant (WWTP)
1	Cataract Creek below Williams WWTP to 1 km downstream	16	Salt River below Phoenix 23rd Avenue WWTP (Phoenix metro WWTPs) to Gila River	31	Lake Humphreys from Flagstaff WWTP
2	Bright Angel Wash below So Rim of Grand Canyon WWTP to Coconino Wash	17	Bitter Creek below Jerome WWTP to Indian Reservation	32	Whale Lake from Flagstaff WWTP
3	Rio de Flag below Flagstaff WWTP to San Francisco Wash	18	American Gulch below the No. Gila County WWTP to E. Verde River	33	Dry Lake from Stone Container WWTP
4	Bennett Wash below ADOC*-Safford WWTP to Gila River	19	Gila River below #16 to Gillespie Dam (Phoenix metro WWTPs)	34	Pintail Lake from Show Low WWTP
5	Unnamed wash below ADOC*-Globe WWTP to Indian Reservation	20	Unnamed wash from Gila Bend WWTP to Gila River	35	Telephone Lake from Show Low WWTP
6	Gila River below Florence WWTP to Felix Rd.	21	Agua Fria River below El Mirage WWTP to 2 km downstream	36	Ned Lake from Show Low WWTP
7	Queen Creek below Superior WWTP to Potts Canyon	22	Agua Fria River below Prescott Valley WWTP (#24)	37	Lower Walnut Canyon Lake from Flagstaff WWTP
8	Unnamed wash below Queen Valley WWTP to Queen Creek	23	Unnamed wash below Luke Air Force Base WWTP to Agua Fria River	38	Lake Cochise south of Twin Lakes Golf Course
9	Walnut Gulch below Tombstone WWTP to Tombstone Wash	24	Unnamed wash below Prescott Valley WWTP to Agua Fria River		
10	Santa Cruz River below Pima County Roger Rd. WWTP to Baumgartner Rd.	25	Unnamed wash to Whitewater Draw below Bisbee Airport WWTP)		
11	Santa Cruz River below Nogales International WWTP to Tubac bridge	26	Holy Moses Wash below Kingman WWTP to 3 km downstream		
12	Sonoita Creek below Patagonia WWTP to 750 ft. downstream	27	Jack's Canyon Wash below Big Park WWTP to Dry Beaver Creek		
13	Unnamed wash below Oracle WWTP to 5 km downstream	28	Transept Canyon below No. Rim Grand Canyon WWTP to 1 km downstream		
14	Pinal Creek below Globe WWTP (#15) to Radium	29	Unnamed tributary to Alder Wash below Mount Lemmon WWTP		
15	Unnamed wash below Globe WWTP to Pinal Creek	30	Mule Gulch below Bisbee WWTP to Highway 80 bridge		

* ADOC = Arizona Department of Corrections

Arizona's assessment criteria

Most of Arizona's assessments are based on numeric water chemistry data. To determine whether there are sufficient data and that the data are representative of the surface water being assessed, the following attributes must be considered: core parametric coverage, number of samples, number of sampling events, seasonal distribution of samples, and sample locations. The criteria for assessment are described in the following paragraphs.

Core Parametric Coverage – Although all parameters with numeric standards are used for this assessment, a core set of parameters was established for each designated use (**text box**). These core parameters must be sampled during at least three independent sampling events to determine whether a specific designated use assigned to the surface water is "attaining."

Core parameters were selected based in part on EPA guidance in the *Consolidated Assessment and Listing Methodology* (CALM) document (EPA 2002). This guidance places emphasis on narrative standards, suggesting that core indicators would include: bioassessments, habitat assessments, ambient toxicity testing, contaminated sediment, health of individual organisms, nuisance plant growth, algae, sediments, and odor and taste. At this time, however, Arizona's core parameters are restricted to numeric standards, at least until narrative standards are adopted into rule.

Core Parametric Coverage

For each designated use, at least three samples of the following parameters are required to assess the designated use as "attaining" uses:

Aquatic and Wildlife: dissolved oxygen, flow (if a stream) and depth (if a lake), hardness, pH, turbidity/suspended sediment concentration, total nitrogen and total phosphorus[1], dissolved metals (cadmium, copper, and zinc)

Fish Consumption: total mercury

Full Body or Partial Body Contact: *Escherichia coli*, pH

Domestic Water Source: nitrate/nitrite or nitrate, pH, total fluoride, and total metals (arsenic, chromium or chromium VI, and lead)

Agriculture Irrigation: pH, total boron, and total manganese

Agriculture Livestock Watering: pH, total copper, and total lead

Special notes:
1. Nitrogen and phosphorus are required only in surface waters with nutrient standards.
2. Dissolved oxygen, turbidity/SSC, and Escherichia coli are not required in ephemeral waters.
3. Suspended sediment concentration is not required in effluent dependent waters.

Arizona's choice of core indicators has changed slightly due to standards changes and more recent water quality research. Dissolved chromium was dropped from Aquatic and Wildlife, and total chromium was added to Domestic Water Source. Lead was also added to Domestic Water Source. Metals were dropped from Full and Partial Body Contact. Core parameters will continue to change in the future as better assessment tools and criteria are developed.

Exempted Exceedance of Standards – Some exceedances are specifically exempted in Arizona's surface water standards or Impaired Water Identification Rule **(Appendix B and C)**. In these cases, the exceedances would be noted in the monitoring tables, but not used as evidence of impairment:

Naturally-occurring conditions (A.A.C. R18-11-119). For this assessment, the naturally-occurring conditions exempted included:

- Low dissolved oxygen occurring due to documented ground water upwelling;
- Areas minimally impacted by human activity, where springs are the source of a pollutant due to natural deposits; or
- Minimally impacted drainage areas, such as a small drainage in the Grand Canyon National Park, where excess turbidity is due to natural erosion of sandstone geological formations.

Operation and maintenance of a canal, drain, or municipal park lake (e.g., dewatering, dredging, and weed control) (A.A.C. R18-11-117);
Routine physical or mechanical maintenance of dams and flood control structures may cause increases in turbidity (A.A.C. R18-11-118); and
Discharge of lubricating oil associated with start-up of well pumps which discharge to canals (A.A.C. R18-11-117).

Note that some waters are not defined as a "surface water" in Arizona's surface water quality standards (e.g., wastewater treatment lagoons or impoundments).

Spatial and Temporal Considerations – To determine whether there are sufficient samples and sampling events to support an assessment, first it must be determined that the samples are spatially and temporally independent, as required by the Impaired Water Identification Rule (A.A.C. R18-11-603). Samples are spatially independent if they are collected more than 200 meters apart; or if collected less than 200 meters apart, samples were taken to characterize the effect of an intervening tributary, outfall, pollution source, or significant hydrographic or hydrologic change. Samples are temporally independent if they are collected more than seven (7) days apart.

If samples are neither spatially nor temporally independent (e.g., samples taken at different depths in a lake), the data will be represented by a calculated value. The method for calculating these values varies by type of surface water standard. If the standard was established to protect from immediate or acute impacts, then a maximum or worst case value for the data set is used. Examples of standards developed for acute exposures include: dissolved metals, chlorine, dissolved oxygen, and ammonia (some of these have chronic standards as well). However, if the standard was developed based on concern for lifetime or long-term exposure, then an appropriate measure of central tendency (e.g., mean, median, geometric mean) is used. Most standards that protect domestic water source, fish consumption, and agricultural uses fall into this second category.

Some surface water quality standards are evaluated by number of sampling events, rather than number of samples. Parameters that must be assessed in this manner are the acute and chronic standards for the Aquatic and Wildlife designated uses, the *Escherichia coli* standard for the Full and Partial Body Contact designated uses, and the nitrate standard for the Domestic Water Source use. An assessment is made based on sampling event, where more than one sampling event exceeding standards is assessed as "impaired." In other words, if an exceedance occurred at multiple sample sites on a reach within a 7-day period, these data are evaluated as one sampling event exceeding standards. In the monitoring tables, event exceedances are indicated in the summary row for each reach or lake.

Adjustments due to Testing Precision – Field measurements and certain analytical methods are sometimes less precise than other water quality measurements. Imprecision due to error is addressed through quality assurance/quality control procedures (e.g., calibration of the field equipment, placement of the instrument in the stream, holding temperatures); however, other variations are inherent in natural systems, equipment specifications, and analytical methods.

When a field sample measurement is within the manufacturer's specification for accuracy, the result is considered to meet the surface water quality standard. For the 2004 listing cycle, three field measurements were adjusted due to the following manufacturer specifications concerning precision:

pH is ± 0.2 standard units,
Dissolved oxygen is ± 0.2 mg/L, and
Turbidity is ± 2 NTU.

For example, dissolved oxygen reported at 5.9 mg/L was not counted as a violation of the 6.0 mg/L standard (range 5.8 - 6.2).

Both lab and field bacterial analyses provide an estimation of bacterial density, reported in terms of Most Probable Number (MPN). For example, using the multiple tube technique, if the result is reported as 240 colony forming units (CFU), there is a 95% confidence level that the result is between 100 and 940 CFU (Clesceri et. al. 1998).

For the 2004 listing cycle, the imprecise nature of bacteria samples were considered when a 303(d) Listing decision would be based on results reported relatively near the single sample maximum standard of 235 CFU. Generally, a 303(d) Listing can result from only two (2) exceedances of the single sample maximum bacteria standard within a three-year period. However, when one of the two samples was near the standard (for example, only 240 CFU), the exceedances were considered "inconclusive" and did not result in a listing.

Assessment of each Designated Use (Step 1) – The following criteria are applied to assess the individual designated uses assigned to the surface water in rule:

Attaining – A designated use is assessed as "attaining" if:

A. For most standards (except situations in B, C, and D below),
   1. Three or more temporally independent sampling events for all core parameters (see core parameters discussion above), collected across multiple seasons, and
   2. No exceedances, or
   3. If exceedances, 10 or more samples and fewer exceedances than would place the water on the Planning List (based on Table 1 in the Impaired Water Identification Rule).

B. For acute Aquatic and Wildlife standards, the nitrate and nitrite/nitrate standard, and single sample maximum bacteria standards,
   1. Three or more temporally independent sampling events for all core parameters, collected across multiple seasons, and
   2. No exceedances, or
   3. If exceedances, three years of samples since last exceedance.

C. For chronic Aquatic and Wildlife standards,
   1. Three or more temporally independent sampling events for all core parameters, collected across multiple seasons, and
   2. No exceedances.

D. For an annual mean (nutrients), 90th percentile (nutrients), or geometric mean (Escherichia coli or SSC), no exceedances within the

assessment period.

Impaired – A designated use is assessed as "impaired" if:

A. For most standards (except situations in B, C, and D below),
   1. 20 or more samples with the minimum number of exceedances listed in Table 2 (the 303d List) in the Impaired Water Identification Rule, and
   2. Collected during three or more temporally independent sampling events.

B. For acute Aquatic and Wildlife acute standards, the nitrate and nitrite/nitrate standard, and single sample maximum bacteria standards),
   1. More than one exceedance during temporally independent sampling events within a 3-year period, and
   2. Fewer than three years of samples since last exceedance.

C. For Aquatic and Wildlife chronic standards,
   1. More than one exceedance during temporally independent sampling events.

D. For an annual mean (nutrients), 90th percentile (nutrients), or geometric mean (Escherichia coli or SSC), more than one exceedance within the assessment period.

Not attaining -- A designated use is assessed as "not attaining" if it would be "impaired" except that:

A. A TMDL has been approved by EPA and TMDL implementation is ongoing, but the surface water is not yet attaining its designated uses;
B. Another action is occurring and documented that is expected to bring the surface water to "attaining" by the next assessment; or
C. Investigation shows that impairment is due to pollution and not a pollutant. (For example, investigation reveals that lake low dissolved oxygen and pH problems are not due to nutrient loadings but are solely due to the lack of flow.)

Inconclusive – A designated use is assessed as inconclusive if:

A. Insufficient samples, exceedances, or core parameters to assess as "attaining," "not attaining," or "impaired" (see above),
B. Samples collected did not meet credible data requirements,
C. There is potential evidence of a narrative violation (i.e., fish kill, beach closure, fish anomalies, exceedances of the former turbidity standard, fish advisory, etc.).

Assessment of the Stream Reach or Lake (Step 2) – Once each designated use is assessed, the assessments are combined into an overall assessment of the stream reach or lake. A stream reach or lake can be placed into one of the following categories:

Attaining All Uses – All designated uses assessed as "attaining" (Category 1);
Attaining Some Uses – At least one designated use assessed as "attaining" and all other uses assessed as "inconclusive" (Category 2);
Inconclusive – All designated uses are "inconclusive" (Category 3) (by default, any surface water not assessed due to lack of credible data is actually included in this category);
Not attaining -- At least one designated use is "not attaining," and no designated use is "impaired" (Category 4);
Impaired – At least one designated use was assessed as "impaired" (Category 5).

Surface waters in Category 5 are placed on the 303(d) List and scheduled for TMDL development. Surface waters with any designated uses assessed as "inconclusive" or "not attaining" are placed on the Planning List for further monitoring.

The flow chart **(Figure 14)** on page 13 helps to illustrate these two steps of the assessment process.

The use assessments are made in Chapter IV and combined for an overall assessment of designated uses. Then the surface waters are placed in one of the five category lists in Chapter V.

Which "Cottonwood Wash" and how much was assessed?

To communicate assessment information and eliminate the ambiguity caused by many streams in Arizona having the same common name (e.g., Sycamore Creek) and a large number of unnamed washes, all of the assessed lakes and streams have been given identification numbers. These numbers are based on the drainage area in which the surface water is located (Hydrologic Unit Code area -- see chapter II) and a reach or lake number. These identification numbers can be linked to a digitized hydrography through a computerized Geographic Information System (GIS). When assessments are complete, ADEQ will provide the assessment information to EPA, along with GIS coverages, which indicate where the assessed lakes and streams are located. These linkages were also used in this report to generate the assessment maps provided in Chapter IV.

Arizona assesses an entire surface water "reach" or lake based on one or more monitoring sites **(Figure 13 and text box)**. As more monitoring data become available, differences in water quality in portions of a reach or a lake may become apparent, and the reach or lake is segmented. This has frequently occurred during TMDL investigations, as the extent of contamination becomes more defined.

Figure 13. Reach Description

Reaches are also routinely divided due to changes in designated uses. The revised water quality standards adopted in 2002 recognized that aquatic communities change from coldwater to warmwater at a 5000-foot elevation; therefore, many reaches were split into coldwater and warmwater portions.

Reach Definition and Delineation

The US Geological Survey divided streams across the United States into drainage areas or Hydrologic Unit Code areas (HUCs). The Environmental Protection Agency then divided the streams into reaches based on hydrological features such as tributaries and dams, and provided a unique number for each stream reach. These reaches have been further divided by ADEQ due to changes in designated uses, hydrology, and documented changes in water quality. In **Figure 13** above, 15060202 is the HUC and 028 is the reach.

An ADEQ staff member prepares to sample Tonto Creek, south of Payson, Arizona. Tonto Creek begins as a coldwater stream at its headwaters near Christopher Creek, Arizona. This site is located at a lower elevation in the warmwater portion of stream, just above its confluence with Gun Creek. Different reaches of the same stream often have varying designated uses and associated water quality standards, so they must be assessed separately.

The Verde River, one of the largest rivers in Arizona, is segmented into 23 reaches for assessment purposes. This site is located at Beasley Flat Recreation Site, near Camp Verde, Arizona.

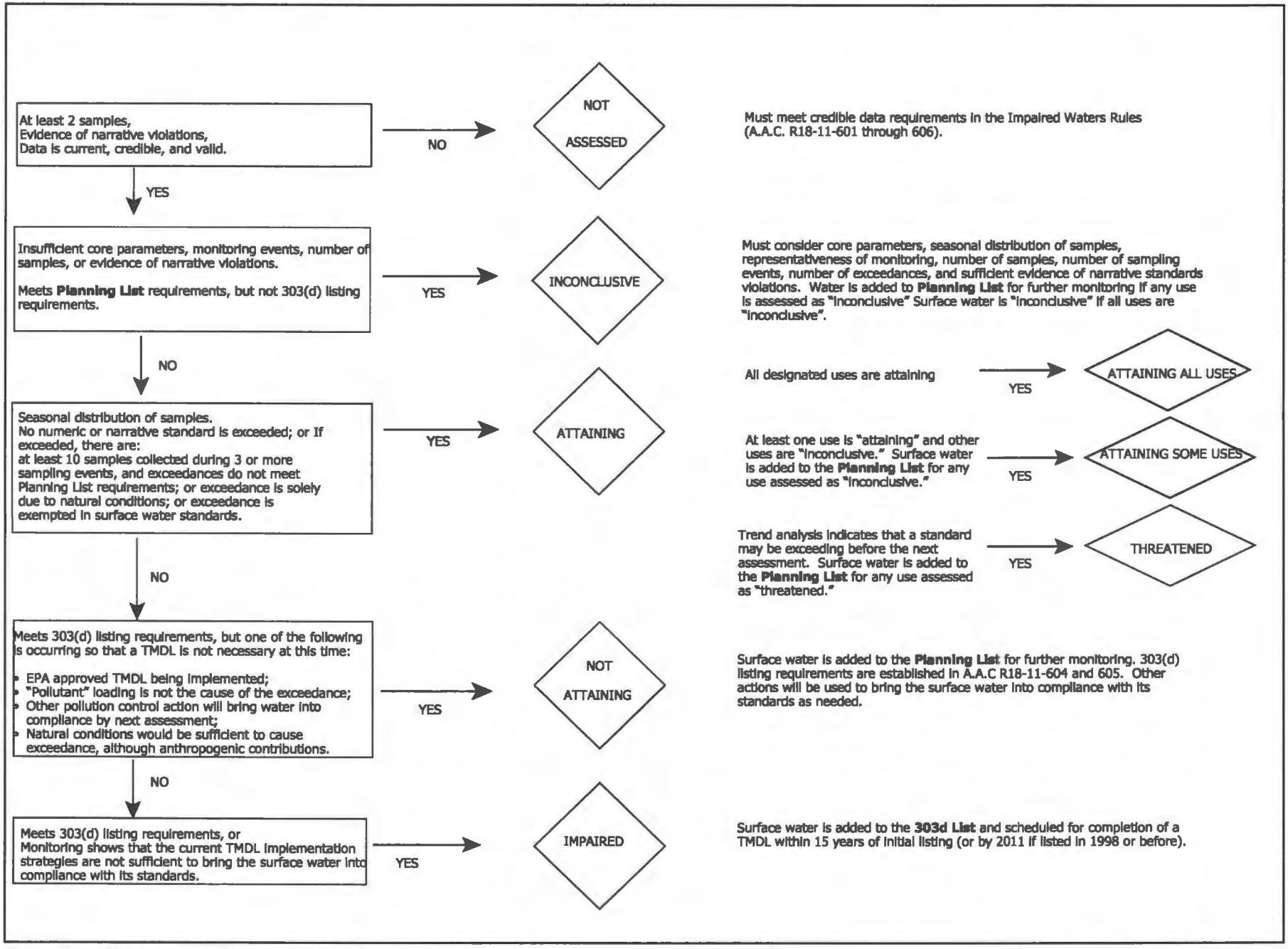


Figure 14. 2004 Assessment Process Diagram

How do lake and stream assessments differ?

The depth of a lake adds an additional level of complexity to an assessment. Samples are frequently collected at multiple levels in a lake because lower levels of a lake may have naturally higher chemical concentrations, especially when the lake is "stratified." Stratification is a natural process in which several horizontal water layers of different density may form in a lake. During stratification, the bottom layer (hypolimnion) is cool, high in nutrients, low in light, low in productivity, and low in dissolved oxygen. The top layer (epilimnion) is warm, higher in dissolved oxygen, light, and production, but normally lower in nutrients. The sharp boundary between the two layers is called a thermocline (metalimnion). Lake stratification is caused by temperature-created differences in water density.

Some measurements are more commonly taken in lakes or are used in a different way in lakes than in streams. For example, Chorophyll-*a,* Secchi depths, and volatile suspended solids results are compared to total suspended solids and turbidity values to determine whether excessive turbidity is actually related to a planktonic algal bloom and potential excessive nutrients or is related to suspended sediments and potential excessive lake sedimentation.

Trophic Status – In addition to comparing water quality monitoring results with standards, ADEQ classifies lakes according to trophic status. Lakes are classified in a continuum of lake stages from low productivity to high productivity as nutrients accumulate or are depleted in the system.

Oligotrophic	Low algal or plant productivity
Mesotrophic	Medium algal or plant productivity
Eutrophic	High algal or plant productivity, and
Hypereutrophic	Very high algal or plant productivity and light-limited (Algae shades available light, inhibiting further growth)

A trophic classification is included in the assessment tables in Chapter IV. The "Trophic Status Index" used in this assessment integrates phosphorus, nitrogen, Secchi depth, and Chlorphyll_*a* data, as indicated in **Table 6.** This trophic classification is based on Patrick Brezonik's "Trophic State Indices: Rationale for Multivariate Approaches" (1986). The Lakes Program is working on refining this trophic analysis in the future by accounting for macrophytes, algal diversity, and biovolume.

Given sufficient time, lakes go through a natural trophic progression accumulating nutrients and biomass. However, activities within the watershed may unduly speed up this process. It is important to note the hydrologic design and construction (e.g., shallow, with little water flow through) of most Arizona lakes may create management challenges such as high productivity and sedimentation.

Table 4. Trophic Classification Thresholds

	TROPHIC STATUS			
	Oligotrophic	Mesotrophic	Eutrophic	Hypereutrophic
Trophic Status Index	<30	30-45	45-65	>65
Chlorophyll-a (µg/L)	<5	5-12	12-20	>20
Secchi Depth (meters)	>3	1.2-3	0.6-1.2	<0.6
Total Phosphorus (µg/L)				
Phosphorus-limited	<10	10-20	20-35	>35
Nitrogen & Phosphorus-limited	<13	13-35	35-65	>65
Total Nitrogen (mg/L)				
Nitrogen-limited	<0.25	0.25-0.65	0.65-1.1	>1.1
Nitrogen & Phosphorus-limited	<0.28	0.28-0.75	0.75-1.2	>1.2

Nitrogen- limited = nitrogen : phosphorus ratio is <10.
Phosphorus-limited = nitrogen : phosphorus ratio is > 30.
Nitrogen and phosphorus-limited (colimited) = nitrogen : phosphorus ratio is 10-30

Can one get a copy of the data used for this assessment?

ADEQ continues to look for ways to share the data used in this assessment report with the public. Monitoring data are summarized in Chapter IV and are organized into tables by watershed. These summary tables indicate which agency and program collected the data, the amount and type of data, dates collected, frequency of exceedances, and more. Ambient surface water quality data collected by ADEQ staff can be obtained through EPA's STORET database on the internet at http://www.epa.gov/STORET.

IV. Surface Water Monitoring and Assessment Information: How Clean is My Stream or Lake?

How are assessments organized?

Arizona's 2004 assessments are presented by watershed in this chapter. For each watershed, the following information is provided:

- A watershed map illustrating monitoring sites and final assessments,
- Surface water quality monitoring tables, and
- Assessment tables.

Surface Water Monitoring Tables – The information in the surface water monitoring tables may be the most valuable information in this report. The monitoring tables summarize the water quality data used and provide the final assessment of individual surface waters. The agency or organization doing the monitoring, number of samples, years sampled, and constituents exceeding standards are shown in these tables. These tables are the basis for 303(d) listing and/or delisting decisions. The information contained within is also used by many federal and state programs that permit activities that may add further discharges to these surface waters. These tables provide the most comprehensive list of monitoring activities in Arizona.

The tables are organized by site (sampling location), indicating what, if any, exceedances were found. The summary rows, indicated by a double border, combine all of the monitoring data from all of the sites in a particular stream reach or lake, and indicate the assessment for each designated use.

Assessment Tables - These comprehensive tables bridge current assessments with past assessments and impaired waters identification. The assessment tables provide the following information:

- Assessments for each designated use: "attaining," "inconclusive," "not attaining," or "impaired" (see criteria in Chapter III);
- Which surface waters will be on the 2004 303(d) List submitted to EPA and the pollutants of concern;
- Which surface waters will be added to the Planning List and the pollutants of concern or reason for this action;
- Which pollutants and surface waters should be removed from the 2002 303(d) List and the reasons for this action; and
- Which TMDLs are ongoing or completed.

As requested in EPA's *Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act*, ADEQ's assessment tables place waters into one of the following five categories:

Category 1	All designated uses are met;
Category 2	Some of the designated uses are attaining but insufficient data to determine if remaining designated uses are attaining or impaired (also includes threatened waters);
Category 3	Insufficient data to determine whether any designated uses are attaining their uses;
Category 4	Water is impaired but a TMDL is not needed;
Category 5	Water is impaired and a TMDL is needed (on the 2004 303(d) List).

Chapter V lists the assessed surface waters by these categories. Those waters on the 303(d) List (Category 5) are then prioritized for TMDL development.

How is a surface water added to or removed from the 303(d) List?

Listing and Delisting Criteria - The criteria for listing or delisting a surface water are established in the Impaired Water Identification Rule (**Appendix B**). In general, the same amount and type of data used to place a surface water on the 303(d) List is needed to remove it from the list. For example, if two bacterial exceedances in a 3-year period put it on the list, then no exceedances in a 3-year period could remove it from the list. However, the data must be collected during similar hydrologic or climatic conditions (i.e., critical conditions) that occurred when samples were taken that indicated impairment, if those conditions still exist. All data must meet the credible data requirements.

When a water is assessed as "impaired," it is added to the 303(d) List. As noted in Chapter III, a designated use is impaired if any of the following occur:

A. For most standards (except situations in B, C, and D below),
   1. 20 or more samples with the minimum number of exceedances listed in Table 2 (the 303d List) in the Impaired Water Identification Rule, and
   2. Collected during three or more temporally independent sampling events.

B. For acute Aquatic and Wildlife acute standards, the nitrate and nitrite/nitrate standard, and single sample maximum bacteria standards:

1. More than one exceedance during temporally independent sampling events within a 3-year period, and
2. Fewer than three years of samples since last exceedance.

C. For Aquatic and Wildlife chronic standards, more than one exceedance during temporally independent sampling events.

D. For an annual mean (nutrients), 90th percentile (nutrients), or geometric mean (*Escherichia coli* or SSC), more than one exceedance within the assessment period.

The criteria for removing a surface water from the 303(d) List can be summarized as follows:

- There are sufficient credible data to determine that the surface water is assessed as "attaining" its designated uses based on numeric and/or narrative criteria for the pollutant of concern (see criteria in Chapter III);
- A TMDL has been completed;
- An EPA approved change in the applicable surface water quality standard or designated use results in the surface water meeting standards;
- Neither the older data nor the current data is sufficient to meet the new impaired waters identification criteria. For example, there was an insufficient number of samples, sampling events, or exceedances.
- Investigations reveal that impairment is not due to a pollutant or surface water quality characteristic but rather due to "pollution" or other situation that cannot be readily addressed through a TMDL (e.g., hydrologic modifications).
- Investigations reveal that pollutant loadings from naturally occurring conditions alone are sufficient to cause a violation of applicable water quality standards.
- Reach is split and no current or historic data exist in one portion of the list that would support a listing.

A list of surface waters and pollutants being removed from the 2002 303(d) List is presented in Chapter V. In many cases, a surface water is simply moved from the 303(d) List to the Planning List for further monitoring or other action unless all designated uses are assessed as "attaining."

EPA Additions to the 303(d) List – In the tables in this chapter, a notation indicates which surface waters were added to the 2002 303(d) List by EPA. This "overfiling" occurred because EPA is not bound by Arizona's Impaired Water Identification Rule nor Arizona's TMDL Statute (Appendix B), and has the authority to revise the 303(d) listings based on federal guidance and policy through an open public process. In 2002, EPA added 19 additional surface waters to the 303(d) List and added three additional pollutants to surface waters already listed. EPA identified the following three situations where waters should have been listed according to federal guidelines, but were not on the Section 303(d) List submitted by Arizona:

- A fish consumption advisory has been issued based on pollutant concentrations in fish tissues collected in Arizona. EPA finds this to be evidence of narrative standards violations.

- Although a fish consumption advisory has not yet been issued, fish tissue data indicate that mercury or other bioaccumulative pollutant levels are much higher than EPA's screening guidelines designed to protect against adverse impacts to human health. This is also evidence of narrative standards violations.

- Available data indicate that surface waters "substantially" exceed the state's water quality standards for specific pollutants. EPA concluded that the state's decision to not list waters with fewer than 20 samples was inconsistent with federal listing requirements if there were sufficient exceedances to support a reliable conclusion that standards are not being attained. Specifically this occurred:

  If there were 3 or more exceedances and ten or fewer samples collected, or

  If there were 5 or more exceedances and fewer than 20 samples collected.

Note that all waters placed on the 2002 303(d) List by EPA remained on the list and are indicated as "impaired." These waters will be delisted when they meet requirements established in Arizona's Impaired Water Identification Rule for delisting (e.g., TMDL complete, changes in standards, sufficient new data indicate that designated uses are being attained).

Based on discussions with EPA's Region IX staff, ADEQ anticipates that EPA will use the same criteria to revise the 2004 list being submitted as part of this report. EPA may also add some waters to the 2004 303(d) List based on exceedances of the former turbidity standard, which they have cited as evidence of a violation of the narrative standard for bottom deposits. Revisions of the 303(d) List by EPA will go through a subsequent public process; however, as an aid to readers, a notation has been added to the following monitoring and assessment tables where ADEQ believes "overfiling" is likely to occur.

Such revisions of the 303(d) Listing by EPA makes this integrated report less useful as a resource, as final listings supercede this report. To make Arizona's and EPA's assessment and listing criteria more compatible, ADEQ is currently developing narrative implementation procedures that will provide the basis for Arizona to make a 303(d) listing due to narrative water quality standards violations. ADEQ also anticipates proposing several other changes to the Impaired Water Identification Rule and Surface Water Quality Standards to facilitate assessments. Any changes to either rule will require an extensive rulemaking process with extensive public involvement.

How is a surface water added to or removed from the Planning List?

Surface waters with any designated uses assessed as "inconclusive" or "not attaining" are placed on the Planning List for further monitoring. The Impaired Water Identification Rule (R18-11-605.C) provides a list of specific criteria for why a surface water must be placed on the Planning List, such as:

- Exceedances of standards;
- Data available does not meet credible data requirements;
- Indications of narrative water quality standard violations, but no narrative implementation procedures established as required; or
- A TMDL has been completed.

However, ADEQ has added other "inconclusive" waters to its internal Planning List. These waters need additional monitoring due to:

- Insufficient core parameter coverage; or
- Insufficient monitoring events.

Planning List delisting criteria -- Criteria for removing a surface water or pollutant from the Planning List are also established in the Impaired Water Identification Rule (R18-11-605.E). A surface water is removed from the Planning List based on the following criteria:

- The surface water is assessed as impaired and added to the 303(d) List; or
- There are sufficient data to determine that the surface water is "attaining" all of its designated uses.

Actually, a surface water may be on both the Planning and 303(d) Lists due to different parameters of concern. As stated above, the only way to be removed from both the Planning List and the 303(d) List is to be assessed as "attaining all uses."

The West Fork of the Little Colorado River, near Greer, Arizona, is on ADEQ's Planning List due to missing core parameters. Core parameters are a set of water quality parameters that ADEQ has deemed necessary to make a full assessment of a stream or lake.

Overview of Assessment Terms and Criteria

Criteria for assessing designated uses and surface waters are provided in Chapter III, along with definitions for designated uses and the "core parametric coverage." These definitions and criteria are complex, so information in Chapter III should be reviewed before looking at tables in this chapter. However, to facilitate review of the assessment tables, summary definitions of some assessment terms are provided below:

Assessing Each Designated Use

Each designated use is assessed as follows:

Attaining – All surface water quality standards are being met based on a minimum of 3 monitoring events that provide seasonal representation and core parametric coverage. **Threatened** waters are a subset of "attaining," where a surface water quality standard is currently being met, but a trend analysis indicates that the surface water is likely to be impaired before the next assessment.

Impaired – A surface water quality standard is not being met based on criteria identified in the Impaired Waters Identification Rule (**Appendix B**).

Not Attaining – A designated use would be assessed as "impaired" except that a TMDL does not need to be completed for one of the following reasons:
A. A TMDL has already been completed and approved by EPA but the surface water is not yet attaining uses.
B. Other pollution control requirements are reasonably expected to result in the attainment of water quality standards by the next regularly scheduled listing cycle.
C. The impairment is not related to a "pollutant" loading, but is caused by "pollution" (e.g. hydrologic modification).

Inconclusive – Monitoring or other assessment information available is insufficient to assess the surface water as "attaining," "threatened," "impaired," or "not attaining."

Combined Assessment of Uses

The individual designated use assessments are combined to provide an assessment of the surface water and each surface water is placed on one of the following five assessment lists:

Attaining All Uses – all designated uses are assessed as "attaining" **(Category 1)**.

Attaining Some Uses – at least one designated use is assessed as "attaining" and others are assessed as "inconclusive" or "threatened" **(Category 2)**.

Inconclusive – All designated uses are assessed as "inconclusive" **(Category 3)**. (Note that all surface waters that were not assessed due to insufficient credible data are by default assessed as being in Category 3.)

Not Attaining – One or more designated use is assessed as "not attaining" and none are assessed as "impaired" **(Category 4)**.

Impaired – One or more designated use is assessed as "impaired" **(Category 5)**.

Designated Uses

Designated uses are specified for stream segments and lakes in the surface water rules (A.A.C. R18-11-104 and 105). Arizona's surface water designated uses include:

Aquatic and Wildlife
- **Coldwater Fishery** (A&Wc)
- **Warmwater Fishery** (A&Ww)
- **Ephemeral Stream** (A&We)
- **Effluent Dependent Water** (A&Wedw)

Full Body Contact (FBC) (i.e., swimming)

Partial Body Contact (PBC) (i.e., non-swimming recreation)

Fish Consumption (FC)

Domestic Water Source (DWS)

Agricultural Irrigation (AgI)

Agricultural Livestock Watering (AgL)

Core Parametric Coverage

Required to Assess a Designed Use as "Attaining" Uses:

Aquatic and Wildlife – Dissolved oxygen, flow (if a stream) and depth (if a lake), hardness, pH, turbidity/suspended sediment concentration, total nitrogen and total phosphorus, dissolved metals (cadmium, copper, and zinc)

Fish Consumption – Total mercury

Full Body or Partial Body Contact – *Escherichia coli*, pH

Domestic Water Source – Nitrate/nitrite or nitrate, pH, total fluoride, total metals (arsenic, chromium or chromium VI, and lead)

Agriculture Irrigation – Total boron, total manganese, pH

Agriculture Livestock Watering – Total metals (copper and lead), pH

Notes:
*Nitrogen and phosphorus are required only in surface waters with nutrient standards.
*In ephemeral waters, the following parameters are not required, dissolved oxygen, turbidity/suspended sediment concentration and *Escherichia coli*.
*In effluent dependent waters and all lakes, suspended sediment concentration is not required.

Francis Creek, near the Upper Burro Creek Wilderness Area north of Bagdad, Arizona.

The Bill Williams Watershed

The Santa Maria River and the Big Sandy River drainages merge at Alamo Lake to create the Bill Williams River, which connects to the Colorado River at Parker Dam. Perennial flow in this watershed is frequently interrupted (short segments), even on the larger, mainstem rivers.

Land ownership is divided approximately as: 27% private land, 28% state land, and 45% federal land (no Tribal lands). With only 8,000 people (2000 census), this watershed does not have any large population centers. Open range grazing is the principal land use. A large mining complex is located in the Bagdad area, while historic mine sites are scattered throughout the watershed.

Elevations range from 8,417 feet (above sea level) at Hualapai Peak to 1,000 feet near the Colorado River. Most of the watershed is below 5,000 feet, with low desert fauna and flora and warmwater aquatic communities where perennial waters exist.

The assessment – Assessments were completed for 16 stream reaches and one lake in this watershed. Of the 256 stream miles assessed, 32 miles (one reach) were attaining all uses and 37 miles (four reaches) were impaired. The one lake that was assessed (Alamo Lake) was found to be impaired. The perennial area of this lake is approximately 1,414 acres. All other surface waters were assessed as inconclusive or attaining some uses.

A watershed assessment map follows on the next page, illustrating stream and lake assessments by category. The Bill Williams **monitoring table (Table 5)** following the map summarizes the water quality data used in the assessment. It is followed by the **assessment table (Table 6)**, which bridges current assessments with past assessments and impaired water identification. Important to note in this table are comments regarding previous 303(d) lists (what has been added and removed), category designations (1 through 5), references to potential actions by EPA, and status of TMDLs.

More detailed information on how to use these tables can be found at the beginning of this chapter (p. IV-1). Information about assessment methods and criteria can be found in Chapter III.

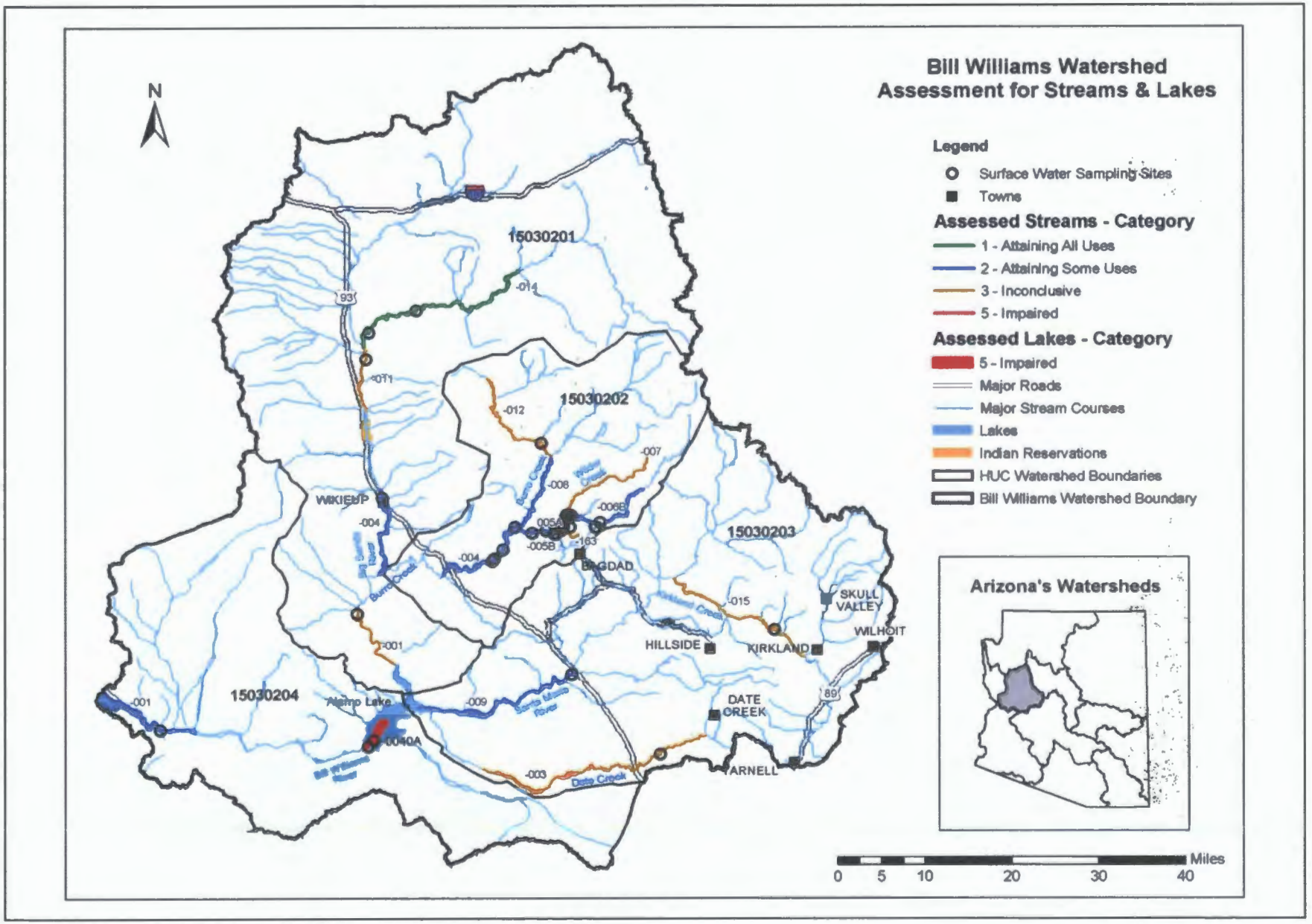


Figure 15. Watershed monitoring and assessments

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
STREAMS MONITORING DATA								
Big Sandy River Deluge Wash - Tule Wash AZ15030201-011 A&Ww, FBC, FC, AgL	ADEQ Ambient Monitoring Below Cane Springs BWBSR041.02 100458	1998 - 1 partial suite 1999 - 3 partial suites	Turbidity (former standard) NTU	50 (A&Ww)	7 - 66	1 of 4		
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998 -1999** **4 sample events**	**Turbidity (former standard) NTU**	**50 (A&Ww)**	**7 - 66**	**1 of 4**	**Inconclusive (see comment)**	**ADEQ collected 4 samples in 1998-1999. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters (see list below) and one exceedance of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.** **Missing core parameters: *Escherichia coli*, dissolved metals (cadmium, copper, and zinc), and total metals (copper, lead, and mercury).**
Big Sandy River Sycamore - Burro Creek AZ15030201-004 A&Ww, FC, FBC, AgL	ADEQ Fixed Station Network Below Highway 93 bridge BWBSR024.50 100400	1998 - 1 partial suite 1999 - 3 full + 2 partial suites 2000 - 4 full suites 2001 - 4 full suites 2002 - 5 full suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	4.9 - 8.4 (63 - 93%)	3 of 19	9/99 8/99 5/01	
			Mercury (total) µg/L	0.6 (FC)	<0.5 - 0.86	1 of 17		
			Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 5.7	1 of 1		Lab reporting limits for 16 other selenium samples were too high to use results for assessment.
			Turbidity (former standard) NTU	50 (A&Ww)	3 - 80	2 of 19		
	Summary Row **A&Ww Inconclusive** **FC Attaining** **FBC Attaining** **AgL Attaining**	**1998-2002** **19 sampling events**	**Dissolved oxygen mg/L**	**6.0 (90% saturation) (A&Ww)**	**4.9 - 8.4 (63 - 93%)**	**3 of 19**	**Attaining**	**ADEQ collected 19 samples in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to selenium exceedance.**
			Mercury (total) µg/L	**0.6 (FC)**	**<0.5 - 0.86**	**1 of 17**	**Attaining**	
			Selenium (total) µg/L	**2 (A&Ww chronic)**	**<5 - 5.7**	**1 of 1 event**	**Inconclusive**	
			Turbidity (former standard) NTU	**50 (A&Ww)**	**3 - 80**	**2 of 19**	**Attaining**	

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Big Sandy River Rupley - Alamo Lake North AZ15030201-001 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Near Signal BWBSR011.20 100457	1998 - 1 field 1999 - 4 field 2002 - 2 full suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	5.2 - 8.4 (62 - 110%)	2 of 7 → 10/02 12/02		
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998-2002** **7 sampling events**	**Dissolved oxygen mg/L**	**> 6.0 (90% saturation) (A&Ww)**	**5.2 - 8.4 (62 - 110%)**	**2 of 7**	**Inconclusive**	**ADEQ collected 7 samples in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to low dissolved oxygen and missing core parameters: *Escherichia coli*, dissolved metals (copper, cadmium, and zinc), and total metals (mercury, copper, and lead).**
Bill Williams River Point B - Colorado River AZ15030204-001 A&Ww, FC, FBC, AgL	USGS Fixed Station #09426600 At Mineral Wash near Planet BWBWR005.88 100924	1998 - 2 partial suites 1999 - 2 partial suites 2000 - 2 partial suites 2001 - 2 partial suites 2002 - 3 partial suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	5.3 - 7.5 (49 - 95% saturation)	1 of 11		
			Turbidity (former standard) NTU	50 (A&Ww)	1 - 69	1 of 8		
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Attaining** **AgL Inconclusive**	**1998 -2002** **11 sampling events**	**Dissolved oxygen mg/L**	**> 6.0 (90% saturation) (A&Ww)**	**5.3 - 7.5 (49 - 95%)**	**1 of 11**	**Attaining**	**USGS collected 11 samples in 1998-2000. Assessed as "attaining some uses" and placed on the Planning List due to exceedance of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.** **Also on the Planning List due to missing core parameters: total metals (mercury, copper, and lead).**
			Turbidity (former standard) NTU	**50 (A&Ww)**	**1 - 69**	**1 of 8**	**Inconclusive**	
Boulder Creek unnamed wash at 34 41'14"/113 03'34" - Wilder Creek AZ15030202-006B A&Ww, FC, FBC, AgI, AgL	Phelps Dodge Bagdad Mine Instream Monitoring Below Tungstona Mine Below Warm Spring Creek Tungstona - 1 BWBOU006.27	1998 - 4 field, metals 1999 - 1 metals 2000 - 3 metals 2001 - 4 metals 2002 - 1 metals	No exceedances					
	Phelps Dodge Bagdad Mine Instream Monitoring At road to Tungstona Mine Tungstona - 2 BWBOU005.86	1998 - 4 field, metals 1999 - 1 metals 2000 - 4 metals 2001 - 4 metals 2002 - 4 metals	Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.2 - 3.4	4 of 4		Lab reporting limits for 13 other mercury samples were too high to use results for assessment.
				2.4 (A&Ww acute)	<0.2 - 3.4	1 of 17		
				0.6 (FC - total)	<0.2 - 3.4	1 of 4		Dissolved mercury data compared to total mercury standards.
	Phelps Dodge Bagdad Mine Instream Monitoring Above Hillside Mine Hillside - 2 BWBOU004.30	1998 - 4 field, metals 1999 - 2 metals 2000 - 3 metals 2001 - 4 metals 2002 - 4 metals	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 10	1 of 16		
				varies by hardness (A&Ww chronic)	<10 - 10	1 of 12		Lab reporting limits for 4 other copper samples were too high to use results for assessment.

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.2 - 2.9	2 of 2		Lab reporting limits for 11 other mercury samples were too high to use results for assessment.
				2.4 (A&Ww acute)	<0.2 - 2.9	1 of 4		
				0.6 (FC - total)	<0.2 - 2.9	1 of 16		Dissolved mercury data compared to total mercury standard.
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 1900	1 of 16		
				varies by hardness (A&Ww chronic)	<10 - 1900	1 of 16		
	ADEQ TMDL Program Site N Above Wilder Creek BWBOU004.15	2000 - 1 partial suite 2001 - 6 partial suites	No exceedances					
	Summary Row **A&Ww *Impaired* (see comment at right)** **FC Attaining** **FBC Inconclusive** **AgI Inconclusive** **AgL Attaining**	**1998 - 2002** **54 samples** **24 sampling events**	**Copper (dissolved) µg/L**	**varies by hardness (A&Ww acute)**	**<10 - 10**	**1 of 18 events (in 2001)**	**Inconclusive**	**Phelps Dodge and ADEQ collected 54 samples at 4 sites in 1998 - 2002. Assessed as "*Impaired*" due to mercury.** **Placed on the Planning List due to copper and zinc exceedances and missing core parameters: total boron and *Escherichia coli*.** ***This 303(d) listing for chronic mercury exceedances is currently under appeal. Not included in Category 5.***
				varies by hardness (A&Ww chronic)	**<10 - 10**	**1 of 19 events**	**Inconclusive**	
			Mercury (dissolved) µg/L	**0.01 (A&Ww chronic)**	**<0.2 - 3.4**	**6 of 6 samples 5 of 5 events**	***Impaired* (see comment at right)**	
				2.4 (A&Ww acute)	**<0.2 - 3.4**	**1 of 17 events (in 2002)**	**Inconclusive**	
				0.6 (FC - total)	**<0.2 - 3.4**	**2 of 9**	**Inconclusive**	
			Zinc (dissolved) µg/L	**varies by hardness (A&Ww acute)**	**<10 - 1900**	**1 of 19 events (OK last 4 years)**	**Attaining**	
				varies by hardness (A&Ww chronic)	**<10 - 1900**	**1 of 19 events**	**Inconclusive**	

TABLE 5. BILL WILLIAMS WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Boulder Creek Wilder Creek - Copper Creek AZ15030202-005A A&Ww, FC, FBC, AgI, AgL	ADEQ TMDL Program Site L Below Wilder Creek BWBOU004.10	2001 - 1 field, metals 2002 - 2 field, metals	No exceedances					
	ADEQ TMDL Program Site JJ At upstream Hillside Mine tailings BWBOU003.90	2002 - 4 field, metals	Arsenic (total) µg/L	50 (FBC)	14 - 58	1 of 4		
			Copper (total) µg/L	500 (AgL)	<15 - 15,200	1 of 4		
			Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<15 - 14,400	2 of 2		Lab reporting limits for 2 other copper samples were too high to use results for assessment.
				varies by hardness (A&Ww acute)	<15 - 14,400	2 of 4		
			Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	5.5 - 6.5	1 of 3		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			Manganese (total) µg/L	10,000 (AgI)	30 - 23,400	1 of 4		
			Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	0.04	1 of 1		
			pH SU	6.5 - 9.0 (A&Ww, FBC, AgL) 4.5 - 9.0 (AgI)	3.7 - 8.1	1 of 4		
			Zinc (total) µg/L	10,000 (AgI)	100 - 129,000	1 of 3		
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	60 - 115,000	2 of 4		
				varies by hardness (A&Ww chronic)	60 - 115,000	2 of 4		
	ADEQ TMDL Program Site J Above Hillside Mine BWBOU003.81	2001 - 1 field, metals 2002 - 5 field, metals	Lead (total) µg/L	15 (FBC)	<5 - 17	1 of 6		
	ADEQ TMDL Program Site H Below Hillside Mine BWBOU003.72	2001 - 1 field, metals 2002 - 12 field, metals	Arsenic (total) µg/L	50 (FBC)	<5 - 287	9 of 13		
				200 (AgL)	<5 - 287	4 of 13		

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<15 - 80	1 of 10		Lab reporting limits for 3 other samples were too high to use results for assessment.
				varies by hardness (A&Ww acute)	<15 - 80	1 of 13		
			Manganese (total) µg/L	10,000 (AgI)	40 - 11,800	2 of 13		
	ADEQ TMDL Program Site G Above Butte Creek and below lower tailings piles BWBOU003.42	2001 - 1 field, metals 2002 - 6 field, metals	Arsenic (total) µg/L	50 (FBC)	<5 - 74	4 of 7		
	Phelps Dodge Bagdad Mine Instream Monitoring Below Hillside Mine Hillside - 1 BWBOU003.31	1998 - 4 field, metals 1999 - 1 metals 2000 - 4 metals 2001 - 4 metals 2002 - 4 metals	Arsenic (dissolved) µg/L	50 (FBC - total)	15 - 400	9 of 9		Dissolved arsenic data compared to total arsenic standards.
				200 (AgL - total)	15 -400	3 of 6		
				190 (A&Ww chronic)	15 - 400	4 of 17		
			Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.2 - 3.8	2 of 2 (1 at detection limit)		Lab reporting limits for 15 other samples were too high to use results for assessment.
				2.4 (A&Ww acute)	<0.2 - 3.8	1 of 17		
				0.6 (FC - total)	<0.2 - 3.8	1 of 4		Dissolved mercury data compared to total mercury standard.
			pH SU	6.5 - 9.0 (A&Ww, FBC, AgI, AgL)	7.5 - 9.5	1 of 17		
			Selenium (total) µg/L	2 (A&Ww)	<1 - 4	1 of 4		
	ADEQ TMDL Program Site E Below Butte Creek BWBOU003.15	2001 - 1 field, metals 2002 - 5 field, metals	Arsenic (total) µg/L	50 (FBC)	11 - 76	3 of 6		
	Phelps Dodge Bagdad Mine Instream Monitoring Above Copper Creek Boulder - 2 BWBOU002.78	1998 - 4 field, metals 1999 - 1 metals 2000 - 3 metals 2001 - 3 metals 2002 - 2 metals	Arsenic (total) µg/L	50 (FBC)	45 - 53	1 of 2		

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row A&Ww Impaired FC Inconclusive FBC Impaired AgI Inconclusive AgL Impaired	1998 - 2002 70 samples 30 sampling events	Arsenic (dissolved) µg/L	190 (A&Ww chronic)	5 - 400	4 of 30 events (4 of 17 at Hillside site)	Impaired	Phelps Dodge and ADEQ collected 70 samples at 8 sites in 1998-2002. Assessed as "impaired" due to arsenic, copper, mercury*, and zinc exceedances. Note: Investigations indicate that arsenic impairs the entire reach, while copper and zinc impair the segment between Wilder Creek and Butte Creek, which is below the lower tailings pile. The extent of mercury contamination has not yet been determined. ADEQ is in the process of developing TMDLs for arsenic, copper, and zinc and expects to submit them to EPA for approval in 2004. If TMDLs are approved before release of the final Integrated Report, this reach will be assessed as "not attaining" (Category 4A) for arsenic, copper, and zinc. On the Planning List due to selenium exceedances and missing core parameters: *Escherichia coli* and total boron. **This 303(d) listing for chronic mercury exceedances is currently under appeal. Note that this stream reach does appear on the list for other parameters.*
			Arsenic (total) µg/L	50 (FBC)	<5 - 400	26 of 45	Impaired	
				200 (AgL)	<5 - 400	8 of 42	Impaired	
			Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<15 - 14,400	2 of 30 events	Impaired	
				varies by hardness (A&Ww acute)	<15 - 14,400	2 of 30 events (in 2001)	Impaired	
			Copper (total) µg/L	500 µg/L (AgL)	<15 - 15,200	1 of 58	Attaining	
			Lead (total) µg/L	15 (FBC)	<5 - 17	1 of 13	Attaining	
			Manganese (total) µg/L	10,000 (AgI)	40 - 11,800	3 of 33	Attaining	
			Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.2 - 3.8	3 of 3 events	*Impaired* (see comment at right)*	
				2.4 (A&Ww acute)	<0.2 - 3.8	1 of 17 events (in 2002)	Inconclusive	
			Mercury (dissolved) µg/L	0.8 (FC - total)	<0.2 - 3.8	1 of 6	Inconclusive	
			pH SU	6.5 - 9 (A&Ww, FBC, AgL)	3.7 - 9.5	1 of 70 too low 1 of 70 too high	Attaining	
				4.5 - 9.0 (AgI)	3.7 - 9.5	1 of 70 too low 1 of 70 too high	Attaining	
			Selenium (total) µg/L	2 (A&Ww chronic)	<1 - 4	1 of 4 events	Inconclusive	
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	<0.01 - 115,000	2 of 30 events (in 2001)	Impaired	
				varies by hardness (A&Ww chronic)	<0.01 - 115,000	2 of 30 events	Impaired	
			Zinc (total) µg/L	10,000 (AgI)	<0.01 - 129,000	1 of 33	Attaining	

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Boulder Creek Copper Creek - Burro Creek AZ15030202-005B A&Ww, FC, FBC, AgI, AgL	ADEQ TMDL Program Site B Below Copper Creek BWBOU002.70	2001 - 1 field, metals 2002 - 6 field, metals	Arsenic (total) µg/L	50 (FBC)	11 - 52	1 of 7		
	Phelps Dodge Bagdad Mine Instream Monitoring Below Copper Creek Boulder - 1 BWBOU002.68	1998 - 4 field, metals 1999 - 1 metals 2000 - 4 metals 2001 - 4 metals 2002 - 4 metals	Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.2 - 7.2	1 of 1		Lab reporting limits for 16 other dissolved mercury samples were too high to use results for assessment. Dissolved mercury data compared to total mercury standard.
				2.4 (A&Ww acute)	<0.2 - 7.2	1 of 17		
				0.6 (FC - total)	<0.2 - 7.2	1 of 8		
			Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	3.9 - 10.5	1 of 5		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			Lead (total) µg/L	15 (FBC)	<5 - 34	1 of 6		
	Phelps Dodge Bagdad Mine Instream Monitoring At Mulholland Wash Boulder - 4 BWBOU000.95	1998 - 3 field, metals 1999 - 1 metals 2000 - 4 metals 2001 - 4 metals 2002 - 1 metals	Selenium (total) µg/L	2 (A&Ww chronic)	<1 - 3	1 of 2		
	Summary Row **A&Ww Inconclusive** **FC Attaining** **FBC Inconclusive** **AgI Inconclusive** **AgL Attaining**	**1998 - 2002** **43 samples** **24 sampling events**	**Arsenic (total) µg/L**	**50 (FBC)**	**<10 - 52**	**1 of 21**	**Attaining**	**Phelps Dodge and ADEQ collected 38 samples at 4 sites in 1998-2002. Assessed as "Inconclusive" and placed on the Planning List due to mercury and selenium exceedances and missing core parameters: *Escherichia coli* and total boron.**
			Lead (total) µg/L	**15 (FBC)**	**<5 - 34**	**1 of 13**	**Attaining**	
			Mercury (dissolved) µg/L	**0.01 (A&Ww chronic)**	**<0.2 - 7.2**	**1 of 1 event**	**Inconclusive**	
				2.4 (A&Ww acute)	**<0.2 - 7.2**	**1 of 13 events (in 2002)**	**Inconclusive**	
				0.6 (FC - total)	**<0.2 - 7.2**	**1 of 14**	**Attaining**	
			Selenium (total) µg/L	**2 (A&Ww chronic)**	**<1 - 3**	**1 of 4 events**	**Inconclusive**	
Burro Creek Francis Creek - Boulder Creek AZ15030202-008 A&Ww, FC, FBC, AgL Unique Water	Phelps Dodge Bagdad Mine Instream Monitoring Above Boulder Creek Burro - 3 BWBRO0011.54	1998 - 4 field, metals 1999 - 1 metals 2000 - 4 metals 2001 - 4 metals 2002 - 4 metals	Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<10 - 20	1 of 17		
				varies by hardness (A&Ww acute)	<10 - 20	1 of 17		
			Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.2 - 0.5	1 of 1		Lab reporting limits for 16 other mercury samples were too high to use results for assessment.

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Ww Inconclusive** **FC Attaining** **FBC Inconclusive** **AgL Attaining**	**1998-2002** **17 sampling events**	**Copper (dissolved) µg/L**	**varies by hardness (A&Ww chronic)**	**<10 - 20**	**1 of 17 events**	**Inconclusive**	**Phelps Dodge collected 17 samples in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to copper and mercury exceedances and missing core parameters: dissolved oxygen and *Escherichia coli*.**
				varies by hardness (A&Ww acute)	**<10 - 20**	**1 of 17 events (in 2002)**	**Inconclusive**	
			Mercury (dissolved) µg/L	**0.01 (A&Ww chronic)**	**<0.2 - 0.5**	**1 of 1 event**	**Inconclusive**	
Burro Creek Boulder Creek - Black Canyon AZ15030202-004 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Below Boulder Creek BWBRO011.53 100403	1999 - 1 full suite 2000 - 3 full suites 2001 - 2 full + 1 partial suite 2002 - 3 full suites	Turbidity (former standard) NTU	50 (A&Ww)	1 - 65	1 of 9		All core parameters collected at this site.
	Phelps Dodge Bagdad Mine Instream Monitoring Below Mammoth Wash Burro 4 BWBOR009.67	1998 - 4 field, metals 1999 - 1 field, metals 2000 - 3 field, metals 2001 - 3 field, metals 2002 - 2 field, metals	No exceedances					
	Phelps Dodge Begdad Mine Instream Monitoring At Suicide Wash Burro 2 BWBOR008.75	1998 - 4 field, metals 1999 - 1 field, metals 2000 - 4 field, metals 2001 - 4 field, metals 2002 - 3 field, metals	Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.2 - 0.8	3 of 3		Lab reporting limits for 13 other mercury samples were too high to use results for assessment. Dissolved mercury data compared to total mercury standard.
				0.6 (FC - total)	<0.2 - 0.8	2 of 9		
	ADEQ Ambient Monitoring Below 6-mile Crossing BWBRO008.56 101365	2002 - 2 full suites	No exceedances					
	Summary Row **A&Ww *Impaired* (see comment at right)** FC Attaining FBC Attaining **AgL Attaining**	**1998 - 2002** **51 samples** **18 sampling events**	**Turbidity (former standard) NTU**	**50 (A&Ww)**	**1 - 65**	**1 of 19**	**Attaining**	**Phelps Dodge and ADEQ collected 51 samples in 1998-2002. Assessed as "Impaired*" due to mercury exceedances.** ****This 303(d) listing for chronic mercury exceedances is currently under appeal. Not included in Category 5.***
			Mercury (dissolved) µg/L	**0.01 (A&Ww chronic)**	**<0.2 - 0.8**	**3 of 3 events**	***Impaired* (see comment at right)***	
				0.6 (FC - total)		**2 of 26**	**Attaining**	

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Butte Creek headwaters - Boulder Creek AZ15030202-163 A&Ww, FBC, FC (tributary rule)	Phelps Dodge Bagdad Mine Permit Monitoring At Butte Creek Butte - 1	1998 - 4 field, metals 1999 - 1 metals 2000 - 3 metals 2001 - 2 metals 2002 - 1 metals	Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.2 - 1.0	2 of 2		Lab reporting limits for 5 other mercury samples were too high to use results for assessment.
			Mercury (total) µg/L	0.6 (FC)	<0.2 - 1.0	1 of 7		
			Selenium µg/L	2 (A&Ww chronic)	<1 - 8	1 of 4		
	Summary Row **A&Ww *Impaired* (see comment at right)** **FC Inconclusive** **FBC Inconclusive**	**1998-2000** **8 sampling events**	**Mercury (dissolved) µg/L**	**0.01 (A&Ww chronic)**	**<0.2 - 1.0**	**2 of 2 events**	***Impaired* (see comment at right)***	**Phelps Dodge collected 8 samples in 1998-2000 at this site. Assessed as "*Impaired*" due to mercury exceedances and placed on the Planning List due to selenium exceedance and missing core parameters: dissolved oxygen and *Escherichia coli*.** ****This 303(d) listing for chronic mercury exceedances is currently under appeal. Not included in Category 5.***
			Mercury (total) µg/L	**0.6 (FC)**	**<0.2 - 1.0**	**1 of 7**	**Inconclusive**	
			Selenium (total) µg/L	**2 (A&Ww chronic)**	**<1 - 8**	**1 of 4 events**	**Inconclusive**	
Date Creek Cottonwood Creek - unnamed reach 15030203-008 AZ15030203-003 A&Ww, FBC, FC, AgL	ADEQ Ambient Monitoring Above Date Creek Ranch BWDAT019.44 100529	2002 - 2 full suites	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**2002** **2 sampling events**	**No exceedances**					**Insufficient monitoring data to assess.**
Francis Creek headwaters - Burro Creek AZ15030202-012 A&Ww, FBC, FC, DWS, AgI, AgL Unique Water	ADEQ Ambient Monitoring Above Spencer Creek BWFRA001.73 100556	2002 - 2 full suites	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**2002** **2 sampling events**	**No exceedances**					**Insufficient monitoring data to assess.**
Kirkland Creek Skull Valley - Santa Maria River AZ15030203-015 A&Ww, FBC, FC, AgI, AgL	ADEQ Ambient Monitoring Ritter's Ranch (Kirkland) BWKRK009.77 100408	2002 - 2 full suites	*Escherichia coli* CFU/100 mL	235 (FBC)	7 - 436	1 of 2		
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**2002** **2 sampling events**	***Escherichia coli*** **CFU/100 mL**	**235 (FBC)**	**7 - 436**	**1 of 2 events (insufficient events)**	**Inconclusive**	**Insufficient monitoring data to assess. Placed on the Planning List due to *Escherichia coli* exceedance.**

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Santa Maria River Bridle Wash - Date Creek AZ15030203-009 A&Ww, FC, FBC, AgI, AgL	ADEQ Fixed Station Network Below Highway 93 bridge BWSMR013.57 100399	1999 - 1 full suite 2000 - 4 full suites 2001 - 4 full suites 2002 - 5 full suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	2.7 - 9.5 (35 - 115%)	2 of 14		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			Escherichia coli CFU/100 mL	235 (FBC)	<2 - 390	1 of 14		
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Inconclusive** **AgI Attaining** **AgL Attaining**	**1999 - 2002** **14 sampling events**	***Escherichia coli*** **CFU/100 mL**	**235** **(FBC)**	**<2 - 390**	**1 of 14 events** **(occurred in 2001)**	**Inconclusive**	**ADEQ collected 14 samples in 1998 - 2002. Assessed as "attaining some uses" and placed on the Planning List due to *Escherichia coli* exceedance.**
Trout Creek Cow Creek - Knight Creek AZ15030201-014 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Above Divide Canyon BWTRT006.15 100670	2002 - 1 full suite	No exceedances					
	ADEQ Fixed Station Network Near Wikieup BWTRT001.79 100397	1999 - 3 full suites 2000 - 4 full suites 2001 - 4 full suites 2002 - 5 full suites	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **AgL Attaining**	**1999-2002** **17 sampling events**	**No exceedances**					**ADEQ collected 17 samples in 1999-2002. Assessed as "attaining all uses."**
Wilder Creek headwaters - Boulder Creek AZ15030202-007 A&Ww, FC, FBC (tributary rule)	ADEQ TMDL Program Site M Near Boulder Creek BWWLD000.27	2000 - 1 field, metals 2001 - 6 field, metals	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive**	**2000-2001** **7 sampling events**	**No exceedances**					**ADEQ collected 7 samples in 2000-2001 as part of the Boulder Creek TMDL. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: turbidity/SSC, *Escherichia coli*, dissolved cadmium, and total mercury.**

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
LAKES MONITORING DATA								
Alamo Lake AZL15030204-0040A A&Ww, FC, FBC, AgL	USFWS/Corps of Engineers Ambient Monitoring BWALA-1	1998 - 10 partial suites 1999 - 1 full + 7 partial suites 2000 - 4 full + 8 partial suites 2001 - 3 full + 9 partial suites 2002 - 3 full + 7 partial suites	Ammonia mg/L	varies by pH and temperature (A&Ww chronic)	<0.01 - 0.72	2 of 36		
			Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	2.7 - 14.5	4 of 47		
			pH SU	6.5 - 9.0 (A&Ww, FBC, AgL)	7.4 - 10.9	14 of 47		
	USFWS/Corps of Engineers Ambient Monitoring BWALA-2	1998 - 10 partial suites 1999 - 8 partial suites 2000 - 1 full + 11 partial suites 2001 - 3 full + 9 partial suites 2002 - 3 full + 7 partial suites	Ammonia mg/L	varies by pH and temperature (A&Ww chronic)	<0.01 - 0.69	1 of 36		
			Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	2.0 - 16.3	3 of 47		
			pH SU	6.5 - 9.0 (A&Ww, FBC, AgL)	7.1 - 10.9	11 of 47		
	USFWS/Corps of Engineers Ambient Monitoring BWALA-3	1998 - 10 pertial suites 1999 - 8 partial suites 2000 - 1 full + 11 partial suites 2001 - 3 full + 9 partial suites 2002 - 3 full + 7 partial suites	Ammonia mg/L	varies by pH and temperature (A&Ww chronic)	<0.01 - 0.42	1 of 36		
			Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	2.0 - 14.7	2 of 47		
			pH SU	6.5 - 9.0 (A&Ww, FBC, AgL)	7.7 - 10.5	9 of 47		
	USFWS/Corps of Engineers Ambient Monitoring BWALA-4	1998 - 10 partial suites 1999 - 8 partial suites 2000 - 1 full + 11 partial suites 2001 - 1 full + 11 partial suites 2002 - 2 full + 8 partial suites	Ammonia mg/L	varies by pH and termperature (A&Ww chronic)	<0.01 - 0.6	2 of 36		
			Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	1.7 - 16.4	2 of 46		
			pH SU	6.5 - 9.0 (A&Ww, FBC, AgL)	7.4 - 10.6	12 of 46		
	ADEQ Lakes Program BWALA - A (deepest) 101350	2002 - 2 field, 1 *Escherichia coli*	No exceedances					
	ADEQ Lakes Program BWALA - B (mid lake) 101351	2002 - 2 field, 1 *Escherichia coli*	No exceedances					

TABLE 5. BILL WILLIAMS WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row A&Ww Impaired FC Impaired* FBC Impaired AgL Impaired	1998-2002 212 samples 54 sampling events	Ammonia mg/L	varies by pH and temperature (A&Ww chronic)	<0.01 - 0.72	6 of 144 samples 2 of 36 events	Impaired	US Fish and Wildlife Service collected 206 samples during 52 sample events in 1998-2002. ADEQ collected field measurements at two sites during 4 sampling events. Assessed as "impaired" due to ammonia exceedances, high pH, and mercury in fish tissue. *EPA placed this reach on the 2002 303(d) List for mercury in fish tissue. Once listed, the surface water cannot be delisted until a TMDL is complete or there are sufficient data collected to indicate that mercury in fish tissue is no longer a concern. A fish consumption advisory was issued in 2004. Placed on the Planning List due to missing core parameters: *Escherichia coli*, dissolved metals (cadmium, copper, and zinc), and total metals (copper and lead).
			Dissolved oxygen mg/L	> 6.0 (90% saturation (A&Ww)	1.7 - 15.3	11 of 190	Attaining	
			pH SU	6.5 - 9.0 (A&Ww, FBC, AgL)	7.4 - 10.9	46 of 189	Impaired	
Coors Lake AZL15030202-5000 A&Ww, FC, FBC	No water quality data	Data not shown No water quality data						
	Summary Row A&Ww Inconclusive FC Inconclusive FBC Inconclusive							Lake assessed as "inconclusive" and placed on the Planning List due to: 1. Insufficient monitoring. 2. A fish consumption advisory due to mercury in fish tissue, issued in 2004. (This may be evidence of narrative standards violations.)

TABLE 6. BILL WILLIAMS WATERSHED – ASSESSMENTS, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
BILL WILLIAMS WATERSHED – STREAM ASSESSMENTS				
Big Sandy River Deluge Wash - Tule Wash 6 miles AZ15030201-011	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to: 1. Former turbidity standard exceedance (1 of 4 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. 2. Missing core parameters: *Escherichia coli*, dissolved metals (cadmium, copper, and zinc) and total metals (copper, lead, and mercury).		
Big Sandy River Sycamore Creek - Burro Creek 14 miles AZ15030201-004	A&Ww Inconclusive FC Attaining FBC Attaining AgL Attaining Category 2 — Attaining Some Uses	On the Planning List due to chronic selenium exceedance (1 of 1 sampling event).		
Big Sandy River Rupley Wash - Alamo Lake North 10 miles AZ15030201-001	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to: 1. Low dissolved oxygen (2 of 7 samples). 2. Missing core parameters: *Escherichia coli*, dissolved metals (cadmium, copper, and zinc), and total metals (copper, lead, and mercury).		
Bill Williams River Point B - Colorado River 15 miles AZ15030204-001	A&Ww Inconclusive FC Inconclusive FBC Attaining AgL Inconclusive Category 2 — Attaining Some Uses	On the Planning List due to: 1. Former turbidity standard exceedance (1 of 8 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. 2. Missing core parameters: total metals (copper, lead, and mercury).		
Boulder Creek unnamed wash at 34 41'14"/113 03'34" - Wilder Creek 14 miles AZ15030202-006B (Reach was split into coldwater and warmwater segments since the last assessment. No current data in 006A.)	A&Ww ~~*Impaired*~~* *(see comment at right)* FC Attaining FBC Inconclusive AgI Inconclusive AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. Acute and chronic copper exceedance (1 of 18 events, occurred in 2001). 2. Chronic zinc exceedance (1 of 19 events). 3. Missing core parameters: total boron and *Escherichia coli*.	**The 303(d) listing for chronic mercury exceedances is currently under appeal. Placed in Category 2 pending outcome of the appeal.* Delist fluoride due to change in fluoride standards. No exceedances occurred under the new standard.	In 2003, ADEQ began a watershed-wide TMDL investigation for sources of mercury impacting Alamo Lake. This included Burro Creek, Boulder Creek, Big Sandy River, and the Santa Maria sub-basins.
Boulder Creek Wilder Creek - Copper Creek 3 miles AZ15030202-005A	A&Ww Impaired FC Inconclusive FBC Impaired AgI Inconclusive AgL Impaired Category 5 — Impaired	On the Planning List due to: 1. Chronic selenium exceedances (1 of 4 sampling events). 2. Missing core parameters: total boron and *Escherichia coli*. Remove beryllium from the Planning List. Standards were revised in 2002. No exceedance under the new standards.	**The 303(d) listing for chronic mercury exceedances is currently under appeal.* On the 303(d) List for arsenic, copper, and zinc. ADEQ is in the process of developing TMDLs for arsenic, copper, and zinc and expects to submit them to EPA for approval in 2004. (Chronic arsenic exceedances in 4 of 30 sampling events, total arsenic exceedances in 26 of 45 samples, chronic and acute copper exceedances in 2 of 30 sampling events, and chronic and acute zinc exceedances 2 of 30 sampling events.) Note: Investigations indicate that arsenic impairs the entire reach, while copper and zinc impair the segment between Wilder Creek and Butte Creek, which is below the lower tailings pile.	In 2003, ADEQ began a watershed-wide TMDL investigation for sources of mercury impacting Alamo Lake. This included Burro Creek, Boulder Creek, Big Sandy River, and the Santa Maria sub-basins. Ongoing coordination between the Bureau of Land Management, Arizona State Land Department, and private owners to conduct cleanup activities at all three sites.

TABLE 6. BILL WILLIAMS WATERSHED -- ASSESSMENTS, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Boulder Creek Copper Creek - Burro Creek 5 miles AZ15030202-005B	A&Ww Inconclusive FC Attaining FBC Inconclusive AgI Inconclusive AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. Acute mercury exceedance (1 of 13 sampling events, occurred in 2002) and chronic mercury exceedance (1 of 1 sampling event). 2. Chronic selenium exceedance (1 of 4 sampling events). 3. Missing core parameters: total boron and *Escherichia coli*.		In 2003, ADEQ began a watershed-wide TMDL investigation for sources of mercury impacting Alamo Lake. This included Burro Creek, Boulder Creek, Big Sandy River, and the Santa Maria sub-basins.
Burro Creek Francis Creek - Boulder Creek 14 miles AZ15030202-008 Unique Water	A&Ww Inconclusive FC Attaining FBC Inconclusive AgL Attaining Category 2 — Attaining Some Uses	On Planning List due to: 1. Acute and chronic copper exceedance (1 of 17 sampling events, occurred in 2002). 2. Chronic mercury exceedance(1 of 1 sampling event,). 3. Missing core parameters: dissolved oxygen and *Escherichia coli*. Remove turbidity from the Planning List. Current monitoring indicates 0 exceedances in 4 samples.		
Burro Creek Boulder Creek - Black Canyon 17 miles AZ15030202-004	A&Ww ~~*Impaired*~~* *(see comment at right)* FC Attaining FBC Attaining AgL Attaining Category 2 – Attaining Some Uses		**The 303(d) listing for chronic mercury exceedances is currently under appeal. Placed in Category 2 pending outcome of the appeal.*	In 2003, ADEQ began a watershed-wide TMDL investigation for sources of mercury impacting Alamo Lake. This included Burro Creek, Boulder Creek, Big Sandy River, and the Santa Maria sub-basins.
Butte Creek headwaters - Boulder Creek 3 miles AZ15030202-163	A&Ww ~~*Impaired*~~* *(see comment at right)* FC Inconclusive FBC Inconclusive Category 3 – Inconclusive AgI and AgL designated uses no longer apply to this reach due to changes in the tributary rule.	On Planning List due to: 1. Chronic selenium exceedances (1 of 4 sampling events). 2. Missing core parameters: dissolved oxygen and *Escherichia coli*.	**The 303(d) listing for chronic mercury exceedances is currently under appeal. Placed in Category 3 pending outcome of the appeal.*	In 2003, ADEQ began a watershed-wide TMDL investigation for sources of mercury impacting Alamo Lake. This included Burro Creek, Boulder Creek, Big Sandy River, and the Santa Maria sub-basins.
Date Creek Cottonwood Creek - unnamed tributary 15030203-008 35 miles AZ15030203-003	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (2 samples).		
Francis Creek headwaters - Burro Creek 24 miles AZ15030202-012 Unique Water	A&Ww Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Insufficient monitoring data to assess (2 samples). 2. Added in 2002 due to exceedance of former turbidity standard (2 of 12 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		
Kirkland Creek Skull Valley - Santa Maria River 23 miles AZ15030203-015	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Insufficient monitoring data to assess (2 samples). 2. *Escherichia coli* exceedance (1 of 2 sampling events).		

TABLE 6. BILL WILLIAMS WATERSHED -- ASSESSMENTS, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Santa Maria River Bridle Wash - Date Creek 25 miles AZ15030203-009	A&Ww Attaining FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to *Escherichia coli* exceedance (1 of 14 events, occurred in 2001).		
Trout Creek Cow Creek - Knight Creek 32 miles AZ15030201-014	A&Ww Attaining FC Attaining FBC Attaining AgL Attaining Category 1 — Attaining All Uses			
Wilder Creek headwaters - Boulder Creek 15 miles AZ15030202-007	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 — Inconclusive	On the Planning List due to missing core parameters: *Escherichia coli*, dissolved cadmium, total mercury, and turbidity/SSC.		
BILL WILLIAMS WATERSHED – LAKE ASSESSMENTS				
Alamo Lake 1,414 acres AZL15030204-0040A	A&Ww Impaired FC Impaired FBC Impaired AgL Impaired Category 5 — Impaired Trophic Status – Eutrophic - Hypereutrophic	On the Planning List due to missing core parameters: *Escherichia coli*, dissolved metals (cadmium, copper, and zinc), and total metals (copper and lead).	Add ammonia to the 303(d) List due to chronic ammonia exceedances (2 of 36 sampling events). On 303(d) List (since 1996) due to high pH. Exceeded standards in 46 of 189 samples. EPA placed this reach on the 2002 303(d) List because of high concentrations of mercury in fish tissue. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use evidence of narrative violations in a listing decision, but once listed the surface water cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that mercury in fish tissue is no longer a concern. ADEQ is currently collecting data and investigating potential mercury sources in support of completing a TMDL. A fish consumption advisory was issued in 2004. Delist dissolved oxygen. Attaining uses with only 11 exceedances in 190 samples. Delist sulfide. New sulfide standards were adopted in 2002. No exceedances of the new standard.	Mercury does not stay in an aqueous state and bioaccumulates rapidly. Additionally, most laboratory reporting limits are not low enough to assess chronic mercury standards; therefore, lack of exceedances in the water column does not provide sufficient information about mercury problems in the lake. In 2003, ADEQ began a watershed-wide TMDL investigation for sources of mercury impacting Alamo Lake. This included Burro Creek, Boulder Creek, Big Sandy River, and the Santa Maria sub-basins.
Coors Lake 229 acres AZL15030202-5000	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 – Inconclusive	On the Planning List due to a fish consumption advisory issued in 2004. This may be evidence of a narrative standards violation.		In 2002, EPA placed on the 303(d) List all waters with fish consumption advisories, citing a narrative standard violation. ADEQ anticipates EPA will take the same action and place this lake on the 2004 303(d) List.

The Colorado River flowing through the cliffs of the Grand Canyon.

The Colorado - Grand Canyon Watershed

This watershed is defined by the Colorado River drainage area, beginning in Arizona at Lake Powell, through the Grand Canyon National Park, to Hoover Dam at Lake Mead. It does not include the Little Colorado River drainage. The watershed contains spectacular incised canyons formed by erosion of sedimentary formations (e.g., sandstone), as well as volcanically formed mountains and high plateaus.

Land ownership is divided approximately as: 15% private land, 5% state land, 45% federal land, and 25% Tribal lands. Most of the 16,437 square miles in this watershed are sparsely populated, with an approximate population of 67,500 people (2000 census). The largest communities are Kingman and Williams. Land use is primarily open grazing, recreation, and silviculture (forestry), with scattered mining districts. The Grand Canyon National Park, Kaibab National Forest, Lake Mead National Recreation Area, and Glen Canyon National Recreation Area are all located within the watershed, and all have restricted land uses to protect natural resources. These federal lands also draw a large number of tourists and recreationists.

Elevations range from 1,000 feet (above sea level) along the Colorado River to 10,400 feet near Flagstaff. The majority of the watershed is between 5,000-7,000 feet in elevation, with high desert fauna and flora, including coldwater aquatic communities where perennial waters exist.

The assessment – Assessments were completed for 24 stream reaches and two lakes. Of the 188 stream miles assessed, zero miles were attaining all uses and 67 miles (three reaches) were impaired or not attaining for at least one use. All others were inconclusive or attaining some uses. Of the 9,840 lake acres assessed, all were assessed as inconclusive or attaining some uses (none were assessed as attaining all uses or impaired).

A watershed assessment map follows on the next page, illustrating stream and lake assessments by category. The Colorado-Grand Canyon **monitoring table (Table 7)** following the map summarizes the water quality data used in the assessment. It is followed by the **assessment table (Table 8)**, which bridges current assessments with past assessments and impaired water identification. Important to note in this table are comments regarding previous 303(d) lists (what has been added and removed), category designations (1 through 5), references to potential actions by EPA, and status of TMDLs.

Detailed information on how to use these tables is found at the beginning of this chapter (p. IV-1). Assessment methods and criteria can be found in Chapter III.

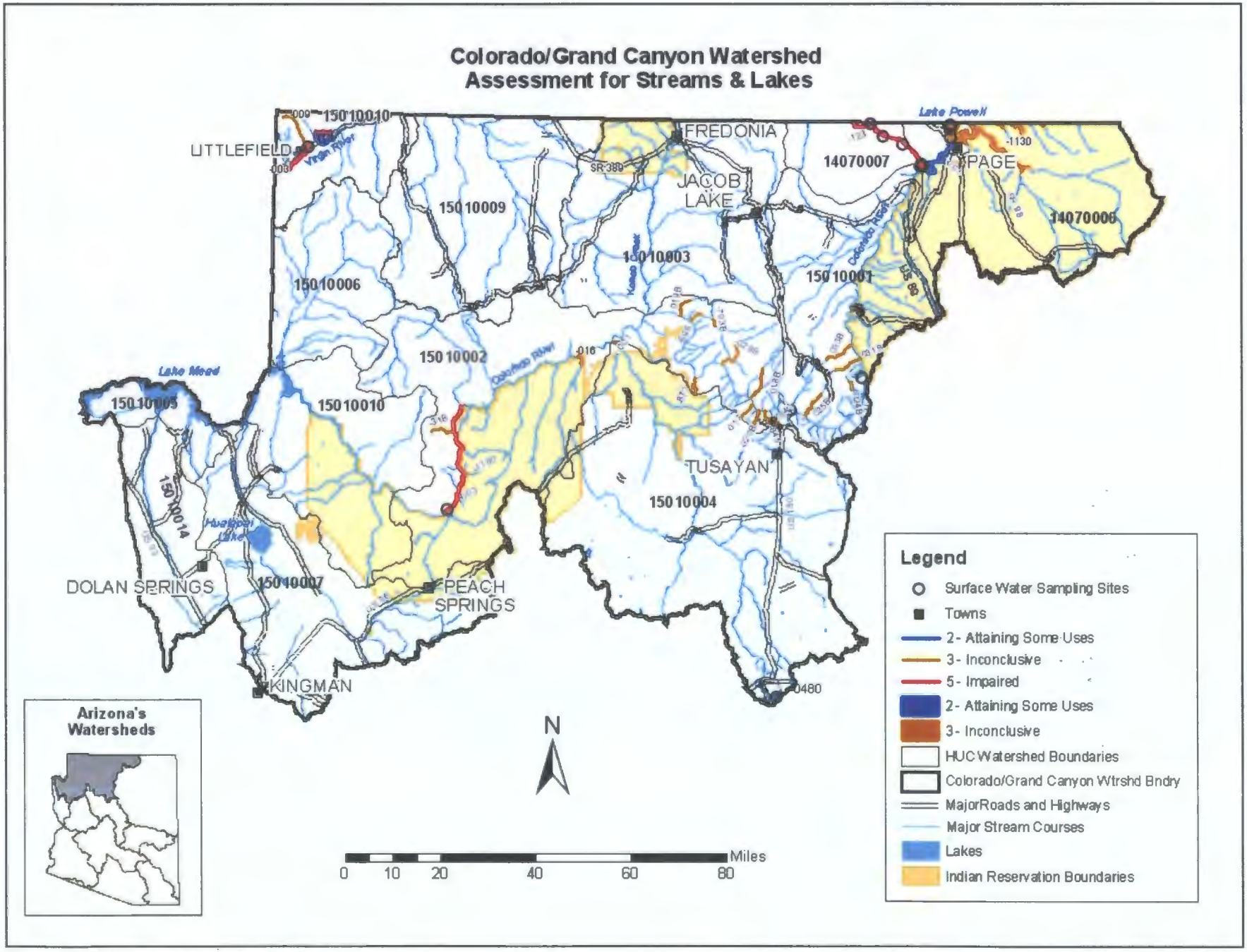


Figure 16. Watershed monitoring and assessments

TABLE 7. COLORADO - GRAND CANYON WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	USE SUPPORT	COMMENTS
STREAM MONITORING DATA								
Colorado River Lake Powell - Paria River AZ14070006-001 A&Wc, FC, FBC, DWS, Agl, AgL	USGS Fixed Station #09380000 At Lee's Ferry CMCLR327.39 100743	1998 - 6 partial suites 1999 - 6 partial suites 2000 - 6 partial suites 2001 - 4 partial suites 2002 - 4 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.5 - 10.1 (99 - 63%)	1 of 25		
	Summary Row **A&Wc Attaining** **FC Attaining** **FBC Attaining** **DWS Inconclusive** **Agl Inconclusive** **AgL Attaining**	**1998-2000** **26 sampling events**	**Dissolved oxygen mg/L**	**> 7.0 (90% saturation) (A&Wc)**	**6.5 - 10.1 (99 - 63%)**	**1 of 25**	**Attaining**	**USGS collected 26 samples 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters: total fluoride and total boron.**
Colorado River Parashant Canyon - Diamond Creek AZ15010002-003 A&Wc, FC, FBC, DWS, Agl, AgL	USGS Fixed Station #09404200 Above Diamond Creek CMCLR233.40 101483	1998 - 12 partial suites 1999 - 12 partial suites 2000 - 9 partial suites 2001 - 8 partial suites 2002 - 8 partial suites	Selenium (total) µg/L	2.0 (A&Wc chronic)	1 - 3.8	9 of 43		All 9 selenium exceedances occurred in 2000-2002.
			Suspended sediment concentration (SSC) mg/L	80 (geometric mean) (A&Wc)	12 - 1500	Geo means: 1998 = 455 1999 = 113 2000 = 101 2001 = 71 2002 = 84		Maximum base flow was calculated to be 23,400 cfs based on 20 years of flow data.
			Turbidity (former standard) NTU	10 (A&Wc)	0.4 - >1000	14 of 30		
	Summary Row **A&Wc Impaired** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **Agl Inconclusive** **AgL Inconclusive**	**1998-2002** **49 sampling events**	**Selenium (total) µg/L**	**2.0 (A&Wc chronic)**	**1 - 3.8**	**9 of 43 events**	**Impaired**	**US Geological Survey collected 49 samples in 1998-2002. Assessed as "impaired" due to selenium and SSC exceedances.** **Also placed on the Planning List due to:** **1. Former turbidity standard exceedances.** **2. Missing core parameters: total boron, *Escherichia coli* and total metals (mercury, arsenic, manganese, copper, and lead).** **Reach was on the 2002 303(d) List due to turbidity. Monitoring will be scheduled to determine whether bottom deposit violations are occurring.**
			Suspended sediment concentration (SSC) mg/L	**80 (geometric mean) (A&Wc)**	**12 - 1500**	**4 of 5 annual geo. means**	**Impaired**	
			Turbidity (former standard) NTU	**10 (A&Wc)**	**0.4 - >1000**	**14 of 30**	**Inconclusive (see comment)**	

TABLE 7. COLORADO - GRAND CANYON WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	USE SUPPORT	COMMENTS
Paria River Utah border - Colorado River AZ14070007-123 A&Ww, FC, FBC	ADEQ and Northern AZ Univ. TMDL Program Site 4 At mile marker 7.5 CMPAR022.37 101076	1998 - 1 field suite 1999 - 5 partial suites 2000 - 3 partial suites 2001 - 1 partial suite	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	4.8 - 10.6	3 of 11		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in the final assessment.
			Turbidity (former standard) NTU	50 (A&Ww)	4 - 492	8 of 11		
	ADEQ and Northern AZ Univ. TMDL Program Site 5 at mile marker 15 CMPAR013.79 101075	1998 - 1 partial suite 1999 - 5 partial suites 2000 - 4 partial suites 2001 - 1 field	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	4 - 10.7	3 of 11		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in the final assessment.
			Turbidity (former standard) NTU	50 (A&Ww)	0 - 441	8 of 11		
	ADEQ and Northern AZ Univ. TMDL Program Site 6 at mile marker 22.5 CMPAR007.95 101074	1998 - 1 partial suite 1999 - 5 partial suites 2000 - 4 partial suites 2001 - 1 partial suite	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	4.3 - 9.1	3 of 11		Low dissolved oxygen is due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in the final assessment
			Turbidity (former standard) NTU	50 (A&Ww)	6.2 - 441	8 of 10		
	ADEQ and Northern AZ Univ. TMDL Program Site 7 at Lees Ferry CMPAR000.55 101073	1998 - 1 partial suite 1999 - 5 partial suites 2000 - 4 partial suites 2001 - 1 partial suite	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	4.3 - 8.2	4 of 11		Low dissolved oxygen is due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in the final assessment.
			Turbidity (former standard) NTU	50 (A&Ww)	7 - 441	8 of 11		
	USGS Special Investigation At Lees Ferry CMPAR001.03 101447	1998 - 66 SSC 1999 - 58 SSC 2000 - 50 SSC	Suspended sediment concentration (SSC) mg/L	80 (A&Ww (geometric mean)	11 - 488,000	Geo means: 1998 = 2545 1999 = 2243 2000 = 1765		Maximum base flow was calculated to be 244 cfs based on 10 years of flow data.

TABLE 7. COLORADO - GRAND CANYON WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	USE SUPPORT	COMMENTS
	Summary Row **A&Ww Impaired** **FC Inconclusive** **FBC Inconclusive**	**1998 - 2001** **222 samples** **186 sampling events**	**Suspended sediment concentration (SSC) mg/L**	**80 (A&Ww) (geometric mean)**	**11 - 1,200,000**	**3 of 3 annual geo. means**	**Impaired**	**ADEQ's TMDL Program along with Northern Arizona University collected 48 samples at 4 sites in 1998 - 2001. USGS collected 174 suspended sediment concentration samples in 1998-2000. Assessed as "impaired" due to SSC exceedances.** **Reach is also on the Planning List due to exceedances of the former turbidity standard and missing core parameters: all except field parameters** **Preliminary studies indicate that turbidity and SSC exceedances are a natural condition caused by erosion of sandstone cliffs.** **Laboratory data from NAU were not included. Lab QA/QC protocols were not fulfilled.**
			Turbidity (former standard) NTU	**50 (A&Ww)**	**0 - 492**	**32 of 43**	**Inconclusive (see comment)**	
Virgin River Beaver Dam Wash - Big Bend Wash AZ15010010-003 A&Ww, FC, FBC, AgI, AgL	USGS Fixed Station # 9415000 At Littlefield, Az CMVGR010.18	1998 - 6 partial suites 1999 - 6 partial suites 2000 - 6 partial suites 2001 - 6 partial suites 2002 - 4 partial suites	*Escherichia coli* CFU/100 ml	235 (FBC)	12 - 3000	1 of 16		
			Selenium (total) µg/L	2 (A&Ww chronic)	<1 - 2.2	3 of 27		
			Suspended sediment concentration (SSC) mg/L	80 (A&Ww) (geometric mean)	23 - 18,300	Geo means: 1998 = 240 1999 = 169 2000 = 133		Maximum base flow was calculated to be 429 cfs based on 30 years of flow data. Insufficient SSC data in 2001 and 2002 to calculate a geometric mean.
			Turbidity (former standard) NTU	50 (A&Ww)	0.3 - 360	12 of 24		
	Summary Row **A&Ww Impaired** **FC Inconclusive** **FBC Attaining** **AgI Inconclusive** **AgL Inconclusive**	**1998-2002** **28 sampling events**	***Escherichia coli* CFU/100 ml**	**235 (FBC)**	**12 - 3000**	**1 of 16 (in 1999, 3 years with no exceedances after)**	**Attaining**	**USGS collected 28 samples in 1998-2002. Assessed as "impaired"due to selenium and SSC exceedances.** **Also placed on the Planning List due to:** **1. Former turbidity standard exceedances.** **2. Missing core parameters: total boron, dissolved metals (cadmium, copper, and zinc), and total metals (mercury, copper, manganese, and lead).** **Reach was on the 2002 303(d) List due to turbidity. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
			Selenium (total) µg/L	**2.0 (A&Ww chronic)**	**<1 - 2.2**	**3 of 27 events**	**Impaired**	
			Suspended sediment concentration (SSC) mg/L	**80 (A&Ww) (geometric mean)**	**23 - 18,300**	**3 of 3 annual geo. means**	**Impaired**	
			Turbidity (former standard) NTU	**50 (A&Ww)**	**1 - 360**	**12 of 24**	**Inconclusive (see comment)**	

TABLE 7. COLORADO - GRAND CANYON WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	USE SUPPORT	COMMENTS
LAKES MONITORING DATA								
Dogtown Reservoir AZL15010004-0480 A&Wc, FC, FBC, DWS, Agl, AgL	ADEQ and Northern AZ Univ. Lakes Program CMDOG - A (deepest) 100019	1999 - 1 field 2001 - 3 partial suites 2002 - 1 full suite	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.6 - 6.9 (72 - 140%)	1 of 5		
			pH SU	6.5 - 9.0 (A&Wc, FBC, DWS, Agl, AgL)	7.2 - 9.6	2 of 5		
			Selenium (total) µg/L	2.0 (A&Wc chronic)	< 2 - 3	1 of 4		
			Turbidity (former standard) NTU	10 (A&Wc)	8 - 75	3 of 4		Naturally occurring erosion of sandstone formations may be the cause of turbidity.
	ADEQ and Northern AZ Univ. Lakes Program CMDOG - BR (boat ramp) 101319	2002 - 1 *Escherichie coli*	OK					
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Inconclusive** **DWS Inconclusive** **Agl Inconclusive** **AgL Inconclusive**	**1999-2002** **6 samples** **5 sampling events**	**Dissolved oxygen mg/L**	**> 7.0 (90% saturation) (A&Wc)**	**6.6 - 6.9 (72 - 140%)**	**1 of 5**	**Inconclusive**	**ADEQ and Northern Arizona University collected 6 samples in 1999 - 2002. Assessed as "attaining some uses" and placed on the Planning List due to: 1. Low dissolved oxygen, 2. High pH, 3. Selenium exceedances, and 4. Former turbidity standard exceedances. Investigation into the causes and sources of turbidity will be scheduled during the next monitoring cycle for this watershed. Also placed on the Planning List due to missing core parameters: *Escherichia coli* and dissolved metals (cadmium, copper, and zinc).**
			pH SU	**6.5 - 9.0 (A&Wc, FBC, DWS, Agl, AgL)**	**7.2 - 9.6**	**2 of 5**	**Inconclusive**	
			Selenium (total) µg/L	**2.0 (A&Ww chronic)**	**< 2 - 3**	**1 of 4 events**	**Inconclusive**	
			Turbidity (former standard) NTU	**10 (A&Wc)**	**8 - 75**	**3 of 4**	**Inconclusive (see comment)**	

TABLE 7. COLORADO - GRAND CANYON WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	USE SUPPORT	COMMENTS
Lake Powell AZL14070006-1130 A&Wc, FC, FBC, DWS, Agl, AgL	Glen Canyon Natl Recreation Area and Bureau of Reclamation Ambient Monitoring Gov't Housing Beach CMPOW - NPS1	1998 - 10 *E. coli* + turbidity 1999 - 11 *E. coli* + turbidity 2000 - 16 *E. coli* + turbidity 2001 - 4 *E. coli* + turbidity 2002 - 10 *E. coli* + turbidity	*Escherichia coli* CFU/100 ml	235 (FBC)	0 - 548	1 of 51		
	Glen Canyon Natl Recreation Area and Bureau of Reclamation Ambient Monitoring Stateline Marina CMPOW - State 1	1999 - 6 *E. coli* + turbidity 2000 - 16 *E. coli* + turbidity 2002 - 8 *E. coli* + turbidity	OK					
	Glen Canyon Natl Recreation Area and Bureau of Reclamation Ambient Monitoring Wahweap Bay Marina CMPOW - WWM1	1998 - 10 *E. coli* + turbidity 1999 - 13 *E. coli* + turbidity 2000 - 18 *E. coli* + turbidity 2001 - 8 *E. coli* + turbidity 2002 - 8 *E. coli* + turbidity	*Escherichia coli* CFU/100 ml	235 (FBC)	0 - 457	1 of 57		
	Glen Canyon Natl Recreation Area and Bureau of Reclamation Ambient Monitoring Picnic Beach CMPOW - WWPB	1998 - 10 *E. coli* + turbidity 1999 - 6 *E. coli* + turbidity 2000 - 8 *E. coli* + turbidity 2002 - 8 *E. coli* + turbidity	OK					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **Agl Inconclusive** **AgL Inconclusive**	**1996 - 1997** **170 samples** **60 sampling events**	***Escherichia coli*** **CFU/100 ml**	**235** **(FBC)**	**0 - 548**	**2 of 170** **(only 1 exceedance in the last 3 years)**	**Inconclusive**	**Bureau of Reclamation and Glen Canyon National Recreation Area collected 170 samples at 4 sites in the Arizona portion of Lake Powell.** **Assessed as "inconclusive" due to 1 exceedance of the *Escherichia coli* standard within the last 3 years of monitoring and missing core parameters. Kept on the Planning List for further monitoring. (Note, no beach closures in Arizona during the past 5 years.)** **Missing core parameters: dissolved oxygen, turbidity, field pH, total boron, total fluoride, dissolved metals (copper, cadmium, and zinc), and total metals (mercury, arsenic, chromium, lead, manganese, copper, and lead).**

TABLE 8. COLORADO-GRAND CANYON WATERSHED ASSESSMENTS, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
COLORADO-GRAND CANYON WATERSHED – STREAM ASSESSMENTS				
Beaver Dam Wash Utah border - Virgin River 10 miles AZ15010010-009	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Boucher Creek California Wash - Colorado River 4 miles AZ15010002-017	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 – Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Chuar Creek tributary at 36 11'36"/111 52'17" - Lava Creek 3 miles AZ15010001-024B (Reach was split into warmwater and coldwater segments since the last assessment. No current data in 024A. Previous data were collected in 024B.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Clear Creek tributary at 36 09'12"/111 58'25" Colorado River 8 miles AZ15010001-025B (Reach was split into warmwater and coldwater segments since the last assessment. No current data in 025A. Previous data were collected in 025B.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Colorado River Lake Powell - Paria River 16 miles AZ14070006-001	A&Wc Attaining FC Attaining FBC Attaining DWS Inconclusive AgI Inconclusive AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to missing core parameters: total fluoride and total boron. Remove selenium from the Planning List. No exceedances of the chronic standard in 19 samples.		
Colorado River Parashant Canyon - Diamond Creek 28 miles AZ15010002-003	A&Wc Impaired FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to: 1. Former turbidity standard exceedances (14 of 30 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. 2. Missing core parameters: *Escherichia coli*, total boron, and total metals (mercury, arsenic, manganese, copper, and lead).	Add selenium to the 303(d) List due to chronic selenium exceedances (9 of 43 sampling events). Add suspended sediment concentration to the 303(d) List due to exceedances of the geometric mean standard in four of five years. Delist turbidity. The turbidity standard was repealed in 2002. Add to the Planning List due to exceedances of the former standard	EPA may also use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Crystal Creek tributary at 36 13'42"/112 11'48" - Colorado River 9 miles AZ15010002-018B (Reach was split into warmwater and coldwater segments since the last assessment. No current data in 018A. Previous data were collected in 018B.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 – Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		

TABLE 8. COLORADO-GRAND CANYON WATERSHED ASSESSMENTS, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Deer Creek tributary at 36 26'16"/112 28'15.5" - Colorado River 5 miles AZ15010002-019B (Reach was split into warmwater and coldwater segments since the last assessment. No current data in 019A. Previous data were collected in 019B.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Garden Creek headwaters - Pipe Creek 3 miles AZ15010002-841	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Havasu Canyon Creek Havasupai Indian Reservation - Colorado River 3 miles AZ15010004-001 (previously listed as Havasu Creek)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	On the Planning List. Added in 2002 due to: 1. Insufficient monitoring (no current data). 2. Former turbidity standard exceedances. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		
Hermit Creek Hermit Pack Trail Crossing - Colorado River 4 miles AZ15010002-020B (Reach was split into warmwater and coldwater segments since the last assessment. No current data in 020A. Previous data were collected in 020B.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Kwagunt Creek tributary at 36 13'29"/111 55'24" - Colorado River 7 miles AZ15010001-031B (Reach was split into warmwater and coldwater segments since the last assessment. No current data in 031A. Previous data were collected in 031B.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Monument Creek headwaters - Colorado River 4 miles AZ15010002-845	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Nankoweap Creek tributary at 36 15'30"/111 57'23" - Colorado River 7 miles AZ15010001-033B (Reach was split into warmwater and coldwater segments since the last assessment. No current data in 033A. Previous data were collected in 033B.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
National Canyon Creek headwaters - Colorado River 3 miles AZ15010002-016	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		

TABLE 8. COLORADO-GRAND CANYON WATERSHED ASSESSMENTS, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Paria River Utah border - Colorado River 29 miles AZ14070007-123	A&Ww Impaired FC Inconclusive FBC Inconclusive Category 5 – Impaired	On the Planning List due to: 1. Former turbidity standard exceedances (32 of 43 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. 2. Missing core parameters: all except field parameters.	Add suspended sediment concentration to the 303(d) List due to exceedances of the geometric mean in all three years monitored. Laboratory data from NAU were not included. Lab QA/QC protocols were not fulfilled.	EPA may also use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Royal Arch Creek headwaters - Colorado River 5 miles AZ15010002-871	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Saddle Canyon Creek tributary at 36 21'35.5"/112 22'46" - Colorado River 5 miles AZ15010002-703B (Reach split into warmwater and coldwater segments since the last assessment. No current data in 703A.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Shinumo Creek tributary at 36 18'21"/112 18'03" - Colorado River 9 miles AZ15010002-029B (Reach split into warmwater and coldwater segments since the last assessment. No current data in 029A. Previous data were collected in 029B.)	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events		
Spring Canyon Creek headwaters - Colorado River 6 miles AZ15010002-318	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events		
Tapeats Creek headwaters - Colorado River 13 miles AZ15010002-696	A&Wc Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Three Springs Creek headwaters - Colorado River 1 mile AZ15010002-1180	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		
Vasey's Paradise (Spring) at Colorado River 0.2 miles AZ15010001-SP01	A&Wc Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current data. Added to the Planning List in 2002 due to insufficient sampling events.		

TABLE 8. COLORADO-GRAND CANYON WATERSHED ASSESSMENTS, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Virgin River Beaver Dam Wash - Big Bend Wash 10 miles AZ15010010-003	A&Ww Impaired FC Inconclusive FBC Attaining AgI Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to: 1. Missing core parameters: total boron, dissolved metals (cadmium, copper, and zinc), and total metals (mercury, manganese, copper, and lead). 2. Former turbidity standard exceedances (12 of 24 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.	Add selenium to the 303(d) List due to chronic selenium exceedances (3 of 27 sampling events). Add suspended sediment concentration to the 303(d) List due to exceedances of the geometric mean in all three years with sufficient SSC monitoring data. Delist fecal coliform. Standards were repealed in 2002. *Escherichia coli* results are supporting designated uses. Delist turbidity. The turbidity standard was repealed in 2002. Add to the Planning List due to exceedances of the former standard.	EPA may also use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
COLORADO-GRAND CANYON WATERSHED – LAKE ASSESSMENTS				
Dogtown Reservoir 70 acres AZL15010004-0480	A&Wc Inconclusive FC Attaining FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 2 – Attaining Some Uses Trophic Status – Eutrophic	On the Planning List due to: 1. Chronic selenium exceedance (1 of 4 sampling events). 2. Low dissolved oxygen (1 of 5 samples). 3. High pH (2 of 5 samples). 4. Missing core parameters: *Escherichia coli* and dissolved metals (copper, cadmium, and zinc). 5. Former turbidity standard exceedances (3 of 4 samples). The causes and sources of turbidity will be investigated during the next monitoring cycle for this watershed.		EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Lake Powell 9,772 acres AZL14070006-1130	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List due to: 1. *Escherichia coli* exceedance (1 exceedance in the last 3 years). 2. Missing core parameters (only *Escherichia coli* and turbidity data).		

The lower Gila River near Dome, Arizona.

The Colorado - Lower Gila Watershed

This watershed is defined by the Colorado River drainage area within Arizona from Hoover Dam (at Lake Mead) to the Mexico border near Yuma, excluding the Bill Williams River and the Gila River above Painted Rocks Dam.

Land ownership is divided approximately as: 1% private land, 6% state land, 89% federal land, and 4% Tribal lands. Except for communities along the Colorado River (Yuma, Bullhead City, Lake Havasu City), most of this 14,459 square mile watershed is sparsely populated with only 187,700 people (2000 census). Due in part to the sparse population, six wildlife refuges and three wilderness areas have been established in this watershed, along with several military bases with live-fire exercise areas. All of these have restricted land uses. Tribal and private land along the lower Colorado River and lower Gila River is intensively cultivated. Open grazing occurs across the watershed.

Elevations range from 5,450 feet (above sea level) in the mountains near Lake Mohave to 80 feet along the Colorado River as it enters Mexico; therefore, the area contains low desert fauna and flora, including warmwater aquatic communities where perennial waters exist. Perennial water is limited to the Colorado River mainstem, with irrigation return flow providing perennial flow in the Gila River near Yuma.

The assessment – Assessments were completed for only six stream reaches and five lakes in this watershed. Of the 143 stream miles assessed, zero miles were attaining all uses and 69 miles (two reaches) were impaired. Of the 29,557 lake acres assessed, none were assessed as attaining all uses and 185 acres (one lake) were assessed as impaired. All others were inconclusive or attaining some uses.

A watershed assessment map follows on the next page, illustrating stream and lake assessments by category. The Colorado-Lower Gila **monitoring table (Table 9)** following the map summarizes the water quality data used in the assessment. It is followed by the **assessment table (Table 10)**, which bridges current assessments with past assessments and impaired water identification. Important to note in this table are comments regarding previous 303(d) lists (what has been added and removed), category designations (1 through 5), references to potential actions by EPA, and status of TMDLs.

More detailed information on how to use these tables can be found at the beginning of this chapter (p. IV-1). Information about assessment methods and criteria can be found in Chapter III.

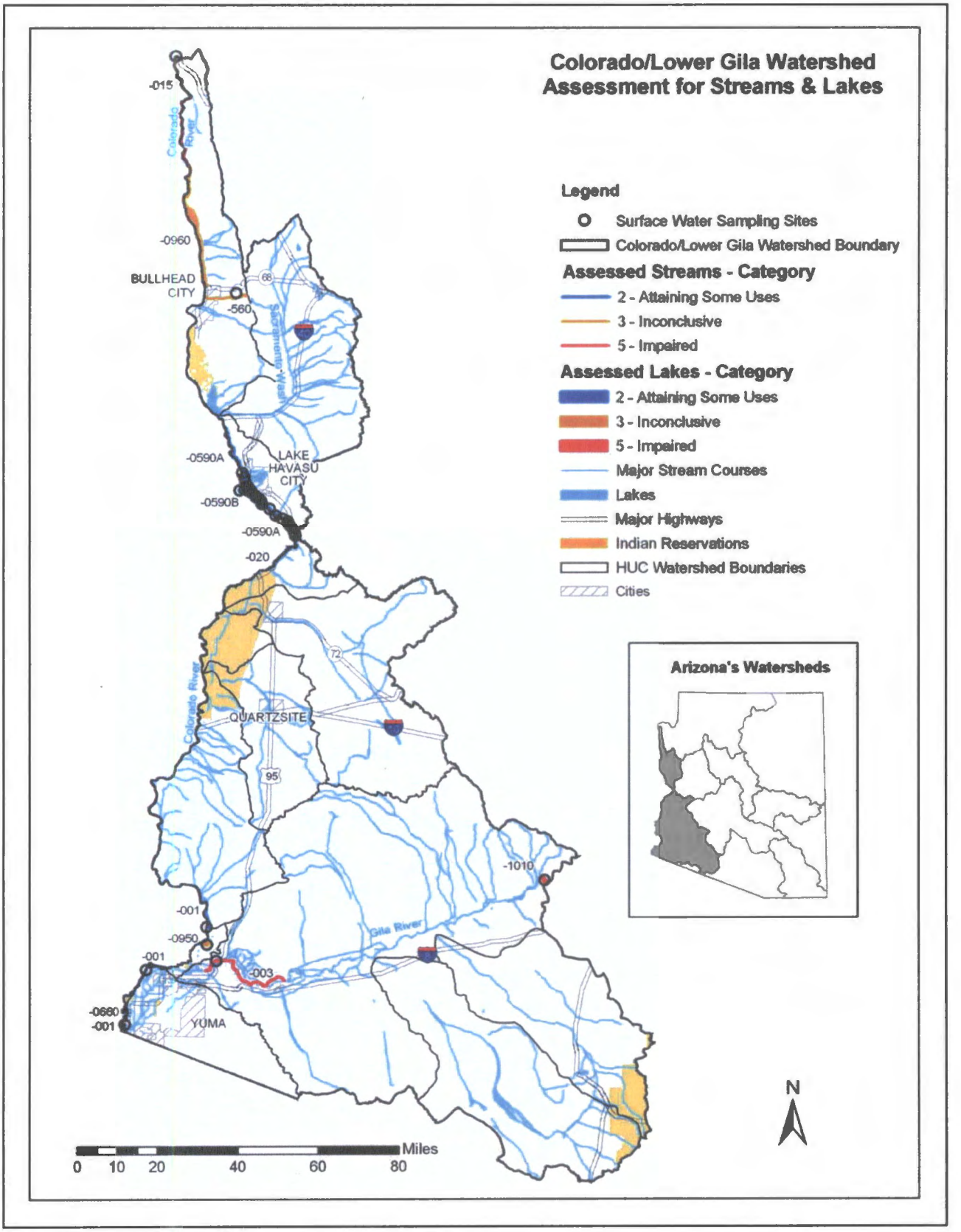


Figure 17. Watershed monitoring and assessments

TABLE 9. COLORADO - LOWER GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
STREAM MONITORING DATA								
Colorado River Hoover Dam - Lake Mohave AZ15030101-015 A&Wc, FC, FBC, DWS, AgI, AgL	USGS Station 09421500 Below Hoover Dam CMCLR243.26	1998 - 5 partial suites 1999 - 6 partial suites 2000 - 6 partial suites 2001 - 5 partial suites 2002 - 3 partial suites	Dissolved oxygen mg/L	>7.0 (90% saturation) (A&Wc)	6.6 - 9.0 (66 - 91%)	2 of 26		
			Selenium (dissolved) µg/L	2.0 (A&Wc chronic - total)	<2.0 - 3.0	4 of 26		Dissolved selenium data compared to total selenium standards.
	Summary Row **A&Wc Impaired** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**1998-2002** **25 sampling events**	**Dissolved oxygen mg/L**	**>7.0 (90% saturation) (A&Wc)**	**6.6 - 9.0 (66 - 91%)**	**2 of 25**	**Attaining**	**USGS collected 25 samples in 1998-2002. Assessed as "impaired" due to selenium exceedances.** **Also placed on the Planning List due to missing core parameters: *Escherichia coli*, total arsenic, total boron, total fluoride, and total metals (chromium, copper, lead, manganese, and mercury).**
			Selenium (dissolved) µg/L	**2.0 (A&Wc chronic - total)**	**<2.0 - 3.0**	**4 of 26 samples 4 of 26 events**	**Impaired**	
Colorado River Bill Williams R. - Osborne Wash AZ15030104-020 A&Ww, FC, FBC, DWS, AgI, AgL	USGS Fixed Station Station #09427520 Below Parker Dam CMCLR127.02	1998 - 6 full suites 1999 - 5 full suites 2000 - 5 full suites 2001 - 4 full suites 2002 - 4 full suites	Selenium (total) µg/L	2.0 (A&Wc chronic)	1.0 - 4.8	1 of 20		Lab reporting limits for 4 other selenium samples were too high to use results for assessment.
	Summary Row **A&Ww Inconclusive** **FC Attaining** **FBC Attaining** **DWS Attaining** **AgI Attaining** **AgL Attaining**	**1998 - 2002** **24 sampling events**	**Selenium (total) µg/L**	**2.0 (A&Wc chronic)**	**1.0 - 4.8**	**1 of 20 events**	**Inconclusive**	**USGS collected 24 samples in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to selenium exceedance.**
Colorado River Indian Wash - Imperial Dam AZ15030104-001 A&Ww, FC, FBC, DWS, AgI, AgL	USGS Fixed Station Station #09429490 Above Imperial Dam CMCLR029.79 100752	1998 - 5 partial suites 1999 - 5 partial suites 2000 - 6 partial suites 2001 - 2 partial suites 2002 - 4 full suites	Suspended sediment concentration mg/L	80 (geo mean) (A&Ww)	8 - 559	Geo means: 1998 = 96 1999 = 27 2000 = 20		Maximum base flow was calculated to be 19,100 cfs based on 30 years of flow data. Insufficient data to calculate a geomean for SSC in 2001 and 2002.
	Summary Row **A&Ww Inconclusive** **FC Attaining** **FBC Attaining** **DWS Attaining** **AgI Attaining** **AgL Attaining**	**1998 - 2002** **22 sampling events**	**Suspended sediment concentration mg/L**	**80 (geo mean) (A&Ww)**	**8 - 559**	**1 of 3 annual geo. means**	**Inconclusive**	**US Geological Survey collected 22 samples in 1998-2002. Assessed as "attaining some uses" due to SSC exceedance.**

TABLE 9. COLORADO - LOWER GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Colorado River Main Canal - Mexico border AZ15030107-001 A&Ww, FC, FBC, DWS, AgI, AgL	USGS Fixed Station Station #09522000 At Mexico boundary Upstream of Morelos Dam CMCLR015.85 100744	1998 - 5 full suites 1999 - 3 full + 2 partial suites 2000 - 5 full + 2 partial suites 2001 - 4 full + 2 partial suites 2002 - 4 full + 2 partial suites	DDE µg/L	0.001 (FC, AgI, AgL)	<0.006 - 0.476	1 of 23		
				0.02 (A&Ww chronic)		1 of 23		
				0.1 (DWS)		1 of 23		
			Dieldrin µg/L	0.002 (A&Ww chronic & DWS)	<0.001 - 0.630	1 of 23		
				0.0001 (FC)		1 of 23		
				0.09 (FBC)		1 of 23		
			Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	5.0 - 11.0 (63 - 105%)	4 of 29		
			Hexachlorocyclo-hexane alpha (BHC) µg/L	0.006 (DWS)	<0.002 - 0.617	1 of 23		
				0.01 (FC)		1 of 23		
				0.22 (FBC)		1 of 23		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	1.0 - 3.0	1 of 21		
			Suspended sediment concentration mg/L	80 (geo mean) (A&Ww)	5.0 - 398	Geo means: 1998 = 128 1999 = 53 2000 = 18 2001 = 14 2002 = 12		Maximum base flow was calculated to be 6460 cfs based on 30 years of flow data.
	Summary Row **A&Ww Inconclusive** **FC Attaining** **FBC Attaining** **DWS Attaining** **AgI Attaining** **AgL Attaining**	**1998 - 2002** **23 sampling events**	**DDE** **µg/L**	**0.001** **(FC, AgI, AgL)**	**<0.006 - 0.476**	**1 of 23**	**Attaining**	**USGS collected 23 samples in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to DDE, dieldrin, SSC, and selenium exceedances.**
				0.02 **(A&Ww chronic)**	**<0.006 - 0.476**	**1 of 23 events**	**Inconclusive**	
				0.1 (DWS)	<0.006 - 0.476	1 of 23	Attaining	
			Dieldrin **µg/L**	**0.002** **(A&Ww chronic)**	**<0.001 - 0.630**	**1 of 23 events**	**Inconclusive**	
				0.002 **(DWS)**	**<0.001 - 0.630**	**1 of 23 events**	**Attaining**	

TABLE 9. COLORADO - LOWER GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
				0.0001 (FC)	<0.001 - 0.630	1 of 23	Attaining	
				0.09 (FBC)	<0.001 - 0.630	1 of 23	Attaining	
			Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	5.0 - 11.0 (63 - 105%)	4 of 29	Attaining	
			BHC µg/L	0.006 (DWS)	<0.002 - 0.617	1 of 23	Attaining	
				0.01 (FC)	<0.002 - 0.617	1 of 23	Attaining	
				0.22 (FBC)	<0.002 - 0.617	1 of 23	Attaining	
			Selenium (total) µg/L	2.0 (A&Ww chronic)	1.0 - 3.0	1 of 21 events	Inconclusive	
			Suspended sediment concentration mg/L	80 (geo mean) (A&Ww)	5.0 - 398	1 of 5 annual geo. means	Inconclusive	
Colorado River, unnamed tributary near Thumb Butte headwaters - Colorado River AZ15030101-560 A&We, PBC	USGS Near Thumb Butte CMUW1009.90 101598	2001 - 1 partial suite	No exceedances					
	Summary Row A&We Inconclusive PBC Inconclusive	2001 1 sampling event	No exceedances					Insufficient monitoring data to assess.
Gila River Coyote Wash - Fortuna Wash AZ15070201-003 A&Ww, FC, FBC, AgI, AgL	ADEQ and USGS Fixed Station Near Dome, USGS #09520500 LGGLR005.76 100455	1998 - 4 full suites 1999 - 5 full suites 2000 - 4 full suites 2001 - 4 full suites 2002 - 3 full suites	Boron (total) µg/L	1000 (AgI)	100 - 1500	5 of 20		
			Dissolved oxygen mg/L	6.0 (90% saturation) (AW&w)	3.2 - 11.8 (40 - 114%)	3 of 18		Two of the dissolved oxygen exceedances occurred during low flow conditions.
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<5 - 9.2	5 of 20		
	Summary Row A&Ww Impaired FC Attaining FBC Attaining AgI Impaired AgL Attaining	1998-2002 20 sampling events	Boron (total) µg/L	1000 (AgI)	100 - 1500	5 of 20	Impaired	ADEQ collected 20 samples in 1998-2002. Assessed as "impaired" due to boron and selenium exceedances.
			Dissolved oxygen mg/L	6.0 (90% saturation) (A&Ww)	3.2 - 11.8 (40 - 114%)	3 of 18	Attaining	
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<5 - 9.2	5 of 20 events	Impaired	

TABLE 9. COLORADO - LOWER GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
LAKES MONITORING DATA								
Hunter's Hole (Colorado River backwater) AZL15030108-0660 A&Ww, FC, FBC, AgL	AGFD Ambient Monitoring CMHUN	2000 - 1 partial suite	Selenium (total) µg/L	20 (A&Ww acute)	<5 - 22	1 of 1		Lab reporting limits for 4 other selenium samples were too high to use results for assessment.
				2.0 (A&Ww chronic)	<5 - 22	1 of 1		
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**2000** **1 sampling event**	**Selenium (total)** **µg/L**	**20** **(A&Ww acute)**	**<5 - 22**	**1 of 1 event (in 2000)**	**Inconclusive**	**Insufficient monitoring data to assess.** **Placed on the Planning List due to selenium exceedance.**
				2 **(A&Ww chronic)**	**<5 - 22**	**1 of 1 event**	**Inconclusive**	
Lake Havasu AZL15030101-0590 A&Ww, FC, FBC, DWS, AgI, AgL	ADEQ Lakes Program Dam Site, Parker Dam CMHAV-A 100098	1998 - 1 partial suite 2000 - 1 partial suite 2001 - 3 full suites 2002 - 1 partial suite	Selenium (total) µg/L	2.0 (A&Ww chronic)	<0.002 - 4	1 of 7		
	ADEQ Lakes Program CMHAV-B 100102	1998 - 1 full suite 2000 - 2 full suites 2001 - 4 full suites 2002 - 1 full suite	Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.5 - 0.8	1 of 1		
			Mercury (total) µg/L	0.6 (FC)	<0.5 - 0.8	1 of 8		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<2 - 3	1 of 5		
	ADEQ Lakes Program CMHAV-C 100099	1998 - 1 full suite 2001 - 4 full suites 2002 - 1 full suite	Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.5 - 0.7	1 of 1		Laboratory reporting limit for 3 other selenium samples was too high to use results for assessment. Dissolved selenium data compared to total selenium standard.
			Mercury (total) µg/L	0.6 (FC)	<0.5 - 0.7	1 of 8		
			Selenium (dissolved) µg/L	2.0 (A&Ww chronic - total)	<2 - 3	1 of 4		
	ADEQ Lakes Program Colorado River CMHAV-CRA 100101	1998 - 1 full suite 2000 - 2 full suites 2001 - 2 full suites 2002 - 1 full suite	No exceedances					
	ADEQ Lakes Program Marina CMHAV-MARA 100187	2000 - 1 full suite 2001 - 1 full suite	No exceedances					

TABLE 9. COLORADO - LOWER GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Mohave County Health Dept 13 sites: Body Beach Cattail Cove Crazy Horse Beach London Bridge, East Beach London Bridge, West Beach Nautical Inn Beach Rotary Beach, North Rotary Beach, South Sandpoint Marina South Channel Up River Windsor #4 Windsor Cove	2000 - 27 *E. coli* 2001 - 18 *E. coli* 2002 - 15 *E. coli*	Escherichia coli CFU	235 (FBC)	<1 - 2419	1 of 60 sampling events (occurred at Nautical Inn Beach in 2000)		Nautical Inn Beach is located in Thompson Bay.
	Mohave County Health Dept 13 sites: Bass Bay Bighorn Point Friendly Island Frog Point Partners Point Pilot Rock Rocky landing Satellite Cove Solitude Cove Standard Wash Cove Steamboat Cove Three Dunes Cove Wren Cove	2000 - 8 *E. coli* 2001 - 2 *E. coli* 2002 - 4 *E. coli*	Escherichia coli CFU	235 (FBC)	<1 - 501	2 of 12 sampling events 1 at Bass Bay (368 CFU) in 2000 1 at Standard Wash Cove (501 CFU) in 2002		Bass Bay is approximately 10 miles south of Thompson Bay. Standard Wash Cove is approximately 6 miles south of Thompson Bay.
	Mohave County Health Dept North Channel	2001 - 18 *E. coli* 2002 - 15 *E. coli*						
	Summary Row **A&Ww Inconclusive** **FC Attaining** **FBC Inconclusive** **DWS Attaining** **Agl Attaining** **AgL Attaining**	**1998 - 2002** **1077 samples**	***Escherichia coli* CFU/100ml**	**235 FBC**	**<1 - 2419**	**3 sites with 1 exceedance: 1 of 60 events 1 of 12 events 1 of 12 events**	**Inconclusive**	**ADEQ collected 108 samples at 33 sites in 1998-2002. Field and *Escherichia coli* samples only were collected at 28 of the 33 sites. These 28 sites are not shown in this table. No exceedances were found.** **Mohave County also collected 969 *Escherichia coli* samples at 27 sites.** **Assessed as "attaining some uses" and placed on the Planning List due to mercury, selenium, and *Escherichia coli* exceedances.** ***Escherichia coli* exceedances were not combined because single exceedances occurred at widely separated beaches (at least 5 miles apart).**
			Mercury (dissolved) µg/L	**0.01 (A&Ww chronic)**	**<0.5 - 0.8**	**2 of 12 samples 1 of 4 events**	**Inconclusive**	
			Mercury (total) µg/L	**0.6 (FC)**	**<0.5 - 0.8**	**2 of 27**	**Attaining**	
			Selenium (total) µg/L	**2 (A&Ww chronic)**	**<2 - 3**	**3 of 24 samples 1 of 7 events**	**Inconclusive**	

TABLE 9. COLORADO - LOWER GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Mittry Lake AZ15030107-0950 A&w, FC, FBC	ADEQ Lakes Program CMMIT-A 101352	2002 - 1 partial suite	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive**	**2002** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**
Painted Rock Borrow Pit Lake AZL15070201-1010 A&Ww, FC, FBC, AgI, AgL	USFWS Routine Monitoring LGPRL	1999 - 5 partial suites 2000 - 1 full + 2 partial suites 2001 - 1 full suite 2002 - 0 (Dry)	Ammonia mg/L	varies with pH and temperature (A&Ww chronic)	0.4 - 0.68	1 of 7		
			Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	1.8 - 13.8	5 of 8		
			pH (high) SU	6.5-9.0 (A&Ww, FBC, AgI, AgL)	7.1 - 9.8	1 of 6		
	Summary Row **A&Ww Impaired** **FC Impaired*** **FBC Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**1999 - 2002** **9 sampling events**	**Ammonia mg/L**	**varies with pH and temperature (A&Ww chronic)**	**0.4 - 0.68**	**1 of 7 samples 1 of 7 events**	**Inconclusive**	**USFWS collected 9 samples in 1999-2002. Assessed as "impaired" due to pesticides in fish tissue and low dissolved oxygen.** ***EPA placed this lake on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue lead to a fish consumption advisory. Once listed, the lake cannot be delisted until a TMDL is complete or sufficient data are collected to indicate these parameters are no longer a concern in fish tissue (fish consumption advisory is removed).** **On the 303(d) List since 1992 for low dissolved oxygen. Although current dissolved oxygen data are inconclusive, the lake cannot be delisted until a TMDL is complete or dissolved oxygen data indicate designated uses are being attained.** **Placed on the Planning List due to exceedances of ammonia and pH standards and missing core parameters: total boron, *Escherichia coli*, dissolved metals (cadmium, copper, and zinc), and total metals (mercury, manganese, copper, and lead).** **Note that the lake was dry in 2002.**
			Dissolved oxygen mg/L	**5.0 (90% saturation) (A&Ww)**	**1.8 - 13.8**	**5 of 8**	**Inconclusive (Impaired)**	
			pH (high) SU	**6.5-9.0 (A&Ww, FBC, AgI, AgL)**	**7.1 - 9.8**	**1 of 8**	**Inconclusive**	

Table 10. COLORADO-LOWER GILA WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE				
SURFACE WATER DESCRIPTION	**2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS**	**2004 PLANNING LIST**	**STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST**	**OTHER INFORMATION**
COLORADO-LOWER GILA WATERSHED – STREAM ASSESSMENTS				
Colorado River Hoover Dam - Lake Mohave 40 miles AZ15030101-015	A&Wc Impaired FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impalrad	On the Planning List due to missing core parameters: *Escherichia coli*, total arsenic, total boron, total fluoride, and total metals (chromium, copper, lead, manganese, and mercury).	Add selenium to the 303(d) List due to chronic selenium exceedances (4 of 26 sampling events).	
Colorado River Bill Williams River - Osborne Wash 13 miles AZ15030104-020	A&Ww Inconclusive FC Attaining FBC Attaining DWS Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to chronic selenium exceedance (1 of 20 sampling events).		
Colorado River Indian Wash - Imperial Dam 18 miles AZ15030104-001	A&Ww Inconclusive FC Attaining FBC Attaining DWS Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to suspended sediment concentration (SSC) geometric mean exceedance (1 of 3 annual geo. means).		
Colorado River Main Canal - Mexico border 32 miles AZ15030107-001	A&Ww Inconclusive FC Attaining FBC Attaining DWS Attaining AgI Attaining AgL Attaining Category 2 -- Attaining Some Uses	On the Planning List due to: 1. Chronic DDE exceedance (1 of 23 sampling events). 2. Chronic dieldrin exceedance (1 of 23 sampling events). 3. Chronic selenium exceedance (1 of 21 sampling events). 4. Suspended sediment concentration (SSC) geometric mean exceedance (1 of 5 annual geo. means).		
Colorado River, unnamed tributary near Thumb Butte headwaters - Colorado River 11 miles AZ15030101-560	A&We Inconclusive PBC Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Gila River Coyote Wash - Fortuna Wash 28 miles AZ15070201-003	A&Ww Impaired FC Attaining FBC Attaining AgI Impaired AgL Attaining Category 5 – Impaired		Add boron to the 303(d) List due to boron exceedances in 5 of 20 samples. Add selenium to the 303(d) List due to chronic selenium exceedances in 5 of 20 sampling events.	

Table 10. COLORADO-LOWER GILA WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
COLORADO-LOWER GILA WATERSHED – LAKE ASSESSMENTS				
Hunter's Hole 17 acres AZL15030108-0660	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List due to: 1. Insufficient monitoring data to assess (only 1 sample). 2. Acute and chronic selenium exceedance (1 of 1 sampling event).		
Lake Havasu 16,122 acres AZL15030101-0590	A&Ww Inconclusive FC Attaining FBC Inconclusive DWS Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses Trophic status – Oligotrophic	On the Planning List due to: 1. Chronic mercury exceedance (1 of 4 sampling events). 2. Chronic selenium exceedance (1 of 7 sampling events). 3. *Escherichia coli* exceedances (1 exceedance at 3 sites). (Note that the *Escherichia coli* exceedances are being assessed separately because the monitoring sites with exceedances were approximately 5 miles apart on the lake. Only 1 exceedance in the last 3 years at any site.)		
Lake Mohave 12,850 acres AZL15030101-0960	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic status – Oligotrophic	On the Planning List. Added in 2002 due to missing core parameters (no current monitoring data).		
Mittry Lake 384 acres AZL15030107-0950	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Painted Rock Borrow Pit Lake 186 acres AZL15070201-1010	A&Ww Impaired FC Impaired FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impaired Trophic status not calculated	On the Planning List due to: 1. Chronic ammonia exceedance (1 of 7 sampling events). 2. pH exceedance (1 of 8 samples). 3. Missing core parameters: total boron, *Escherichia coli*, total metals (mercury, manganese, lead, and copper), and dissolved metals (copper, cadmium, and zinc).	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation policy before the state may use narrative information in a listing decision, but once listed, the lake cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (e.g., fish consumption advisory removed). ADEQ is currently collecting fish tissue data in support of completing a TMDL. On the 303(d) List since 1992 for low dissolved oxygen. Although current dissolved oxygen data are inconclusive, the reach cannot be delisted until a TMDL is complete or dissolved oxygen data indicate that designated uses are being attained. Delist fecal coliform. Standard was repealed in 2002. Placed on the Planning List for *Escherichia coli* monitoring (replaced fecal coliform standard).	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to assess standards; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.

Silver Creek, a tributary of the Little Colorado River, near Snowflake, Arizona.

The Little Colorado - San Juan Watershed

This watershed is defined by the Little Colorado River drainage area from its headwaters to the Colorado River. The flow on the Little Colorado River is "interrupted" (stretches of perennial, intermittent, and ephemeral flow). Perennial flow is generally limited to headwater streams.

Land ownership is divided approximately as: 15% private land, 10% state land, 15% federal land, and 60% Tribal lands. This 26,794 square mile watershed is sparsely populated outside of Flagstaff, with 236,500 people (including Flagstaff). Land use is primarily open grazing, forestry, recreation, and mining. Land and resource use is restricted on four national monuments, four designated wilderness areas, and two national forests.

Elevations range from 12,600 feet (above sea level) at Humphrey's Peak to 2,700 feet near the Colorado River; however, almost the entire watershed is above 5000 feet elevation (desert highlands flora and fauna), with coldwater aquatic communities where perennial waters exist.

The area includes horizontally stratified sedimentary rocks (e.g., sandstone and limestone) which have eroded to form canyon and plateaus. In a few areas, igneous rocks have deposited on sedimentary formations due to volcanic activity. Natural erosion can be easily increased by human activities in such locations.

The assessment – Assessments were completed for 35 stream reaches and 22 lakes in this watershed. Of the 473 stream miles assessed, zero miles were attaining all uses and 93 miles (eight reaches) were impaired or not attaining a use. Of the 4,866 lake acres assessed, none were assessed as attaining all uses and 1,735 acres (three lakes) were assessed as impaired or not attaining a use. All other reaches and lakes assessed were inconclusive or attaining some uses.

A watershed assessment map follows on the next page, illustrating stream and lake assessments by category. The Little Colorado **monitoring table (Table 11)** following the map summarizes the water quality data used in the assessment. It is followed by the **assessment table (Table 12)**, which bridges current assessments with past assessments and impaired water identification. Important to note in this table are comments regarding previous 303(d) lists (what has been added and removed), category designations (1 through 5), references to potential actions by EPA, and status of TMDLs.

Detailed information on how to use these tables is found at the beginning of this chapter (p. IV-1). Assessment methods and criteria can be found in Chapter III.

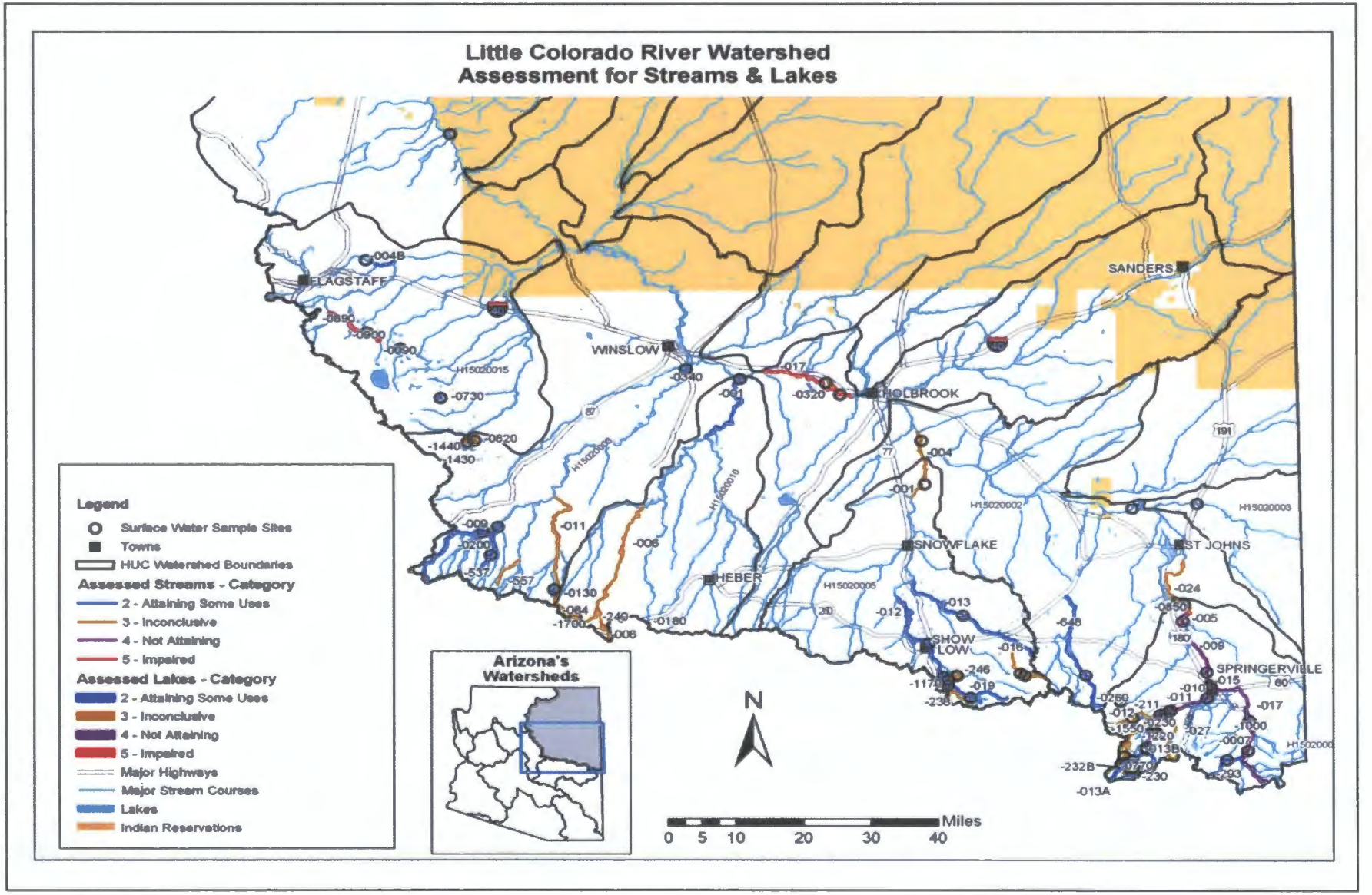


Figure 18. Watershed monitoring and assessments

TABLE 11. LITTLE COLORADO - SAN JUAN WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
STREAM MONITORING DATA								
Barbershop Canyon Creek headwaters - East Clear Creek AZ15020008-537 A&Wc, FC, FBC, AgL	ADEQ Ambient Monitoring At Merrit Draw LCBRB003.84 100410	2000 - 1 full suite 2001 - 3 full suites	Dissolved oxygen mg/L	>7.0 (90% saturation) (A&Ww)	6.5 - 10.00 (88 - 97%)	1 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment. Lab reporting limits for copper were too high to use results for assessment.
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **AgL Attaining**	**2000-2001** **4 samples**	**No exceedances**					**ADEQ collected 4 samples in 2000-2001. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameter: dissolved copper.**
Billy Creek headwaters - Show Low Creek AZ15020005-019 A&Wc, FC, FBC, AgL	ADEQ Ambient Monitoring At Pinetop LCBIL003.66 100946	2000 - 1 full suite 2001 - 3 full suites	*Escherichia coli* CFU/100 ml	235 (FBC)	<2 - 420	1 of 4		Lab reporting limits for copper were too high to use results for assessment.
			Turbidity (former standard) NTU	10 (A&Wc)	5 - 16	1 of 2		
	ADEQ Ambient Monitoring Above Porter Creek LCBII000.03 100947	2000 - 1 full suite 2001 - 3 full suites	Turbidity (former standard) NTU	10 (A&Wc)	4 - 28	3 of 4		
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Inconclusive** **AgL Attaining**	**2000-2001** **8 samples** **4 sampling events**	***Escherichia coli*** **CFU/100ml**	**235** **(FBC)**	**<2 - 420**	**1 of 4 events** **(in 2000)**	**Inconclusive**	**ADEQ collected 8 samples at 2 sites in 2000-2001. Assessed as "attaining some uses" and placed on the Planning List due to:** **1. *Escherichia coli* exceedance,** **2. Missing core parameter: dissolved copper, and** **3. Former turbidity standard exceedances. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
			Turbidity (former standard) **NTU**	**10** **(A&Wc)**	**4 - 28**	**4 of 8**	**Inconclusive**	
Brown Creek headwaters - Silver Creek AZ15020005-016 A&Wc, FC, FBC (tributary rule)	ADEQ Ambient Monitoring Outside of exclosures LCRBRO009.99 101241	2001 -1 full suite	No exceedances					Lab reporting limits for copper were too high to use results for assessment.
	ADEQ Ambient Monitoring Below Brown Spring- within cattle exclosure LCBRO0010.4 101242	2001 - 1 full suite	No exceedances					

TABLE 11. LITTLE COLORADO - SAN JUAN WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**2001** **2 samples** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**
Chevelon Creek Black Canyon - Little Colorado River AZ15020010-001 A&Wc, FC, FBC, AgL, AgI	ADEQ Ambient Monitoring Below diversion dam near Winslow LCCHC000.69 100341	2001 - 1 full suite 2002 - 3 full suites	Turbidity (former standard) NTU	10 (A&Wc)	12 - 34	4 of 4		
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **AgI Attaining** **AgL Attaining**	**2001 - 2002** **4 sampling events**	**Turbidity (former standard)** **NTU**	**10** **(A&Wc)**	**12 - 34**	**4 of 4**	**Inconclusive**	**ADEQ collected 4 samples in 2001- 2002. Assessed as "attaining some uses" and placed on the Planning List due to exceedances of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
Colter Creek headwaters - Nutrioso Creek AZ15020001-293 A&Wc, FC, FBC, AgL	ADEQ Ambient Monitoring Near Nutrioso LCCHC001.94 100935	2001 - 1 full suite 2002 - 3 full suites	No exceedances					Lab reporting limits for copper were too high to use results for assessment.
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **AgL Attaining**	**2001 -2002** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2001-2002. Assessed as "attaining some uses" and placed on the Planning list due to missing core parameter: dissolved copper.**
East Clear Creek headwaters - Yeager Canyon AZ15020008-009 A&Wc, FC, FBC, AgL, AgI	ADEQ Ambient Monitoring Above Yeager Canyon LCECL007.86 100537	2000 - 1 full suite 2001 - 3 full suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.4 - 10.5 (72 - 91%)	2 of 4		Lab reporting limits for copper were too high to use results for assessment.
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **AgI Attaining** **AgL Attaining**	**2000 - 2001** **4 samples** **4 sample events**	**Dissolved oxygen** **mg/L**	**> 7.0** **(90% saturation)** **(A&Wc)**	**5.4 - 10.5** **(72 - 91%)**	**2 of 4**	**Inconclusive**	**ADEQ collected 4 samples in 2000-2001. Assessed as "attaining some uses" and placed on the Planning List due to low dissolved oxygen and missing core parameter: dissolved copper.**
Fish Creek headwaters - Little Colorado River AZ15020001-211 A&Wc, FC, FBC, AgL	ADEQ Ambient Monitoring upstream FS Road #116 LCFIS001.97 101244	2001 - 1 full suite	Mercury (dissolved) µg/L	0.01 (A&Wc chronic)	0.6	1 of 1		Lab reporting limits for copper samples were too high to use results for assessment. Dissolved mercury data compared to total mercury standard.
				0.6 (FC)		1 of 1		
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**2001** **1 sampling event**	**Mercury (dissolved)** **µg/L**	**0.01** **(A&Wc chronic)**	**0.6**	**1 of 1 event**	**Inconclusive**	**Insufficient monitoring data to assess (only 1 sample).** **Placed on the Planning List due to mercury exceedance.**
				0.6 **(FC)**		**1 of 1**	**Inconclusive**	
Hall Creek headwaters - Little Colorado River AZ15020001-012 A&Wc, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Below wilderness area and above Highway 273 LCHAL007.00 101263	2001 - 1 full suite	Dissolved oxygen mg/L	>7.0 (A&Wc)	6.5	1 of 1		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.

TABLE 11. LITTLE COLORADO - SAN JUAN WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **Agl Inconclusive** **AgL Inconclusive**	**2000-2001** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess (only 1 sample).**
Lee Valley Creek Lee Valley Reservoir - East Fork of Little Colorado River AZ15020001-232B A&Wc, FBC, FC, AGL	ADEQ Ambient Monitoring Above wilderness boundary LCLVL00.85 101243	2001 - 1 full suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**2001** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess (only 1 sample).**
Little Colorado River West Fork Little Colorado - Water Canyon Creek AZ15020001-011 A&Wc, FC, FBC, Agl, AgL	Town of Eager "Big Ditch" Project Site 1 - At South Fork of LCR LCLCR174.81	2001 - 3 field 2002 - 12 field	Turbidity (former standard) NTU	10 (A&Wc)	3 - 18	2 of 15		Lab reporting limits for dissolved copper and cadmium were too high to use results for assessment.
	Town of Eager "Big Ditch" Project Site 2 - At golf course LCLCR174.26	2001 - 3 field 2002 - 12 field	Turbidity (former standard) NTU	10 (A&Wc)	5 - 29	3 of 15		
	ADEQ Ambient Monitoring Below South Fork of LCR LCLCR173.85 100581	2000 - 1 full suite 2001 - 3 full suites	Turbidity (former standard) NTU	10 (A&Wc)	6 - 21	1 of 4		
	ADEQ Ambient Monitoring Above South Fork of LCR LCLCR173.84 100580	1998 - 1 partial suite	No exceedances					
	Town of Eager "Big Ditch" Project Site 3 - At State Route 60 Port of Entry LCLCR172.98	2001 - 3 field 2002 - 12 field	Turbidity (former standard) NTU	10 (A&Wc)	9 - 33	12 of 15		
			Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	8.4 - 12.4	1 of 15		
	Summary Row **A&Wc Not attaining** **FC Attaining** **FBC Attaining** **Agl Attaining** **AgL Attaining**	**1998 - 2002** **50 samples** **20 sampling events**	**Turbidity (former standard)** **NTU**	**10** **(A&Wc)**	**3 - 21**	**18 of 50**	**Not attaining (see comment)**	**The Town of Eager collected 45 field samples, and ADEQ collected 5 samples from 1998-2002. A turbidity TMDL was completed for the Little Colorado River in 2002.** **Assessed as "not attaining" due to turbidity and placed on the Planning List for TMDL follow-up monitoring and missing core parameters: dissolved metals (copper and cadmium).**
			Dissolved oxygen **mg/L**	**> 7.0** **(A&Wc)**	**6.4 - 12.4**	**1 of 50**	**Attaining**	

TABLE 11. LITTLE COLORADO - SAN JUAN WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Little Colorado River Nutrioso Creek - Carnero Wash AZ15020001-009 A&Wc, FC, FBC, AgI, AgL	ADEQ Fixed Station Network Below Springerville WWTP LCLCR172.60 100331	1999 - 3 full + 1 partial suite 2000 - 4 full suites 2001 - 4 full suites 2002 - 1 full suite	*Escherichia coli* CFU/100 ml	235 (FBC)	260	1 of 12		
			Turbidity (former standard) NTU	10 (A&Wc)	5 - 24	9 of 12		
	Summary Row **A&Wc Not attaining** **FC Attaining** **FBC Inconclusive** **AgI Attaining** **AgL Attaining**	**1999-2000** **13 sampling events**	***Escherichia coli*** **CFU/100 ml**	**235** **(FBC)**	**260**	**1 of 12 events (in 2000)**	**Inconclusive**	**ADEQ collected 13 samples in 1999-2000. A turbidity TMDL was completed for the Little Colorado River in 2002. Assessed as "not attaining" due to exceedances of the former turbidity standard and placed on the Planning List for turbidity TMDL follow-up monitoring. Also placed on the Planning List due to *Escherichia coli* exceedance.**
			Turbidity (former standard) **NTU**	**10** **(A&Wc)**	**5 - 24**	**9 of 12**	**Not attaining**	
Little Colorado River unnamed reach (15020001-021) to Lyman Lake AZ15020001-005 A&Wc, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Above Lyman Lake LCLCR161.69 101174	2000 - 1 full suite 2001 - 3 full suites	*Escherichia coli* CFU/100 ml	235 (FBC)	<2 - 354	1 of 3		
			Turbidity (former standard) NTU	10 (A&Wc)	18 - 481	3 of 3		
	Summary Row **A&Wc Not attaining** **FC Attaining** **FBC Inconclusive** **AgI Attaining** **AgL Attaining**	**2000-2001** **4 sampling events**	***Escherichia coli*** **CFU/100 ml**	**235** **(FBC)**	**<2 - 354**	**1 of 3 events (in 2001)**	**Inconclusive**	**ADEQ collected 4 samples in 2000-2001. A turbidity TMDL was completed for the Little Colorado River in 2002. Assessed as "not attaining" due to exceedances of the former turbidity standard and placed on the Planning List for *Escherichia coli* exceedance and TMDL follow-up monitoring.**
			Turbidity (former standard) **NTU**	**10** **(A&Wc)**	**18 - 481**	**3 of 3**	**Not attaining**	
Little Colorado River HUC 15020001 boundary - unnamed tributary (15020002-025) AZ15020002-024 A&Wc, FC, FBC, DWS, AgI, AgL	AGFD Routine Monitoring At Weinema Bridge LCLCR158.36	1999 - 1 partial suite 2000 - 1 partial suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**2000** **2 sampling events**	**No exceedances**					**Insufficient monitoring data to assess.**
Little Colorado River Silver Creek - Carr Wash AZ15020002-004 A&Wc, FC, FBC, DWS, AgI, AgL	USGS & ADEQ Fixed Station Near Woodruff LCLCR120.11 100334	1998 - 1 partial suite 1999 - 1 full + 3 partial suites 2000 - 3 full + 1 partial suite 2001 - 4 full suites 2002 - 1 full + 1 partial suite	Arsenic (total) µg/L	50 (DWS, FBC)	<10 - 67	1 of 11		
			Barium (total) µg/L	2000 (DWS)	180 - 7,700	2 of 10		
			Beryllium (total) µg/L	4 (DWS)	<0.5 - 43	2 of 12		
			Chromium (total) µg/L	100 (DWS)	<10 - 120	1 of 12		
			Dissolved oxygen mg/L	>7 (90% saturation) (A&Wc)	6.3 - 10.2 (81 - 105%)	1 of 11		

TABLE 11. LITTLE COLORADO - SAN JUAN WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			Escherichia coli CFU/100 ml	235 (FBC)	<2 - 57,000	2 of 9 (2 in last 3-year period)		
			Lead (total) µg/L	15 (DWS, FBC)	<5 - 290	3 of 12		
				100 (AgL)		2 of 12		
			Manganese (total) µg/L	980 (DWS)	<50 - 9,800	2 of 12		
			Mercury (total) µg/L	0.6 (FC)	<0.5 - 0.97	1 of 12		
			Nickel (total) µg/L	140 (DWS)	<100 - 210	1 of 10		
			Suspended sediment conc. (SSC) mg/L	80 (geometric mean) (A&Wc)	248	1 of 1 sample		Insufficient data to calculate a geometric mean. Need a minimum of 4 samples. Not included in the final assessment.
			Turbidity (former standard) NTU	10 (A&Wc)	54 - >1000	8 of 8		
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Impaired** **DWS Inconclusive** **AgI Attaining** **AgL Attaining**	**1998-2002** **15 samples** **15 sampling events**	**Arsenic (total) µg/L**	**50 (DWS, FBC)**	**<10 - 67**	**1 of 11**	**Attaining**	**ADEQ and USGS collected 19 samples in 1998-2002. Assessed as "impaired" due to *Escherichia coli* exceedances.** **Placed on the Planning List due to:** **1. Lead exceedances.** **2. Former turbidity standard exceedances. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
			Barium (total) µg/L	**2000 (DWS)**	**190 - 7,700**	**2 of 10**	**Attaining**	
			Beryllium (total) µg/L	**4 (DWS)**	**<0.5 - 43**	**2 of 12**	**Attaining**	
			Chromium (total) µg/L	**100 (DWS)**	**<10 - 120**	**1 of 12**	**Attaining**	
			Dissolved oxygen mg/L	**> 7 (90% saturation) (A&Wc)**	**6.3 - 10.2 (61 - 105%)**	**1 of 11**	**Attaining**	
			***Escherichia coli* CFU/100 ml**	**235 (FBC)**	**<2 - 57,000**	**2 of 9 events (in 2000 and 2001)**	**Impaired**	
			Lead (total) µg/L	**15 (DWS, FBC)**	**<5 - 290**	**3 of 12**	**Inconclusive**	
				100 (AgL)	**<5 - 371**	**2 of 12**	**Attaining**	
			Manganese (total) µg/L	**980 (DWS)**	**<50 - 9,800**	**2 of 12**	**Attaining**	
			Mercury (total) µg/L	**0.6 (FC)**	**<0.5 - 0.97**	**1 of 12**	**Attaining**	

TABLE 11. LITTLE COLORADO - SAN JUAN WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			Nickel (total) µg/L	140 (DWS)	<100 - 210	1 of 10	Attaining	
			Turbidity (former standard) NTU	10 (A&Wc)	54 - >1000	8 of 8	Inconclusive (see comment)	
Little Colorado River Zion Reservoir - Concho Creek AZ15020002-018 A&Wc, FBC, FC, DWS, AgI, AgL	USGS Fixed Station Near St. Johns #09386100 LCLCR143.39 101459	1999 - 5 SSC events 2000 - 9 SSC events 2001 - 5 SSC events 2002 - 3 SSC events	Suspended sediment concentration (SSC) mg/L	80 (geometric mean) (A&Wc)	8 - 2180	Geo means: 1999 = 183 2000 = 37 2001 = 25		Maximum base flow was calculated to be 17 cfs based on 30 years of flow data. Insufficient SSC data to calculate a geomentric mean in 1998 or 2002.
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive	**1999-2002** **39 samples** **22 sampling events**	**Suspended sediment concentration (SSC) mg/L**	**80 (geometric mean) (A&Wc)**	**8 - 2180**	**1 of 3 annual geo. means**	**Inconclusive**	**USGS collected 39 SSC samples during 22 sampling events in 1999-2002. Assessed as "inconclusive" and placed on the Planning List due to SSC exceedance and missing core parameters: all except SSC.**
Little Colorado River Porter Tank Draw - McDonalds Wash AZ15020008-017 A&Ww, FBC, FC, DWS, AgI, AgL	USGS Fixed Station Near Joseph City #09397300 LCLCR108.60 101480	1998 - 8 SSC events 1999 - 6 SSC events 2000 - 3 SSC events 2001 - 8 SSC events 2002 - 2 SSC events	Suspended sediment conc. (SSC) mg/L	80 (geometric mean) (A&Wc)	146 - 515,000	Geo means: 1998 = 49,029 1999 = 22,906 2001 = 47,248		Maximum base flow was calculated to be 2020 cfs based on 30 years of flow data. Insufficient monitoring data to calculate a geometric mean in 2000 or 2002.
	Summary Row A&Ww Impaired FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive	**1998-2002** **93 samples** **27 sampling events**	**Suspended sediment concentration (SSC) mg/L**	**80 (geometric mean) (A&Wc)**	**146 - 515,000**	**3 of 3 annual geo. means**	**Impaired**	**USGS collected 93 SSC samples during 27 sampling events in 1998-2002.** **Reach was on the 2002 303(d) List due to past copper and silver exceedances (no current data). Assessed as "impaired" due to past copper and silver exceedances and current SSC exceedances.** **Placed on the Planning List due to missing core parameters: all missing except SSC.**
Little Colorado River, East Fork headwaters - Hall Creek AZ15020001-230 A&Wc, FBC, FC, AGL	ADEQ Ambient Monitoring Near Greer LCELR000.92 100948	2000 - 1 full suite 2001 - 3 full suites	No exceedances					Lab reporting limits for dissolved copper and cadmium were too high to use results for assessment.
	Summary Row A&Wc Inconclusive FC Attaining FBC Attaining AgL Attaining	**2000-2001** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2000-2001. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters: dissolved metals (copper and cadmium).**
Little Colorado River, South Fork headwaters - Little Colorado R. AZ15020001-027 A&Wc, FC, FBC, AgL	ADEQ Biocriteria Program At S. Fork Campground LCSLR001.29 100644	1998 - 1 partial suite	No exceedances					Lab reporting limits for dissolved copper were too high to use results for assessment.
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive	**1998** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Little Colorado River, West Fork headwaters - Gov't Springs AZ15020001-013A A&Wc, FC, FBC Unique Water	ADEQ Biocriteria Program Mount Baldy Wilderness LCWLR004.09 100694	1998 - 1 partial suite	No exceedances					Lab reporting limits for dissolved copper and cadmium were too high to use results for assessment.
	ADEQ Ambient Monitoring Below Sheep's Crossing LCWLR003.30 100945	2000 - 1 partial suite 2001 - 2 full suites 2002 - 1 full suite	No exceedances					
	ADEQ Biocriteria Program Above Government Springs LCWLR001.08 100695	1998 - 1 partial suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining**	**1998-2002** **6 samples** **5 sampling event**	**No exceedances**					**ADEQ collected 6 samples at 3 sites in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters: dissolved metals (copper and cadmium).**
Little Colorado River, West Fork Gov't Springs - Little Colorado R. AZ15020001-013B A&Wc, FC, FBC, AgL	ADEQ Fixed Station Network At Government Springs LCWLR000.78 100328	1999 - 4 full suites 2000 - 4 full suites 2001 - 4 full suites 2002 - 1 full suite	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	8.3 - 10.7 (82 - 118%)	2 of 11		Low dissolved oxygen due to naturally occurring ground water upwelling (at spring), and not anthropogenic causes. Not included in final assessment. Lab reporting limits for 12 other copper and cadmium samples were too high to use results for assessments.
			Copper (dissolved) µg/L	varies by hardness (A&Wc chronic)	<10 - 13	1 of 1		
				varies by hardness (A&Wc acute)	<10 - 13	1 of 1		
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **AgL Attaining**	**1999-2002** **13 sampling events**	**Copper (dissolved) µg/L**	**varies by hardness (A&Wc chronic)**	**<10 - 13**	**1 of 1 event**	**Inconclusive**	**ADEQ collected 13 samples in 1999-2002. Assessed as "attaining some uses" and placed on the Planning List due to copper exceedance and missing core parameters: dissolved metals (copper and cadmium).**
				varies by hardness (A&Wc acute)	**<10 - 13**	**1 of 1 event (in 2002)**	**Inconclusive**	
Mineral Creek headwaters - Concho Creek AZ15020002-648 A&Wc, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Above Forest Road #404 LCMIN014.01 100593	2000 - 1 full suite 2001 - 3 full suites	Dissolved oxygen mg/L	>7.0 (90% saturation) (A&Wc)	8.4 - 9.9 (86 - 91%)	1 of 4		Lab reporting limits for dissolved copper were too high to use results for assessment.
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **AgI Attaining** **AgL Attaining**	**2000-2001** **4 samples**	**Dissolved oxygen mg/L**	**> 7.0 (90% saturation) A&Wc)**	**6.4 - 9.9 (86 - 91%)**	**1 of 4**	**Inconclusive**	**ADEQ collected 4 samples in 2000-2001. Assessed as "attaining some uses" and placed on the Planning List due to low dissolved oxygen and missing core parameter: dissolved copper.**
Nutrioso Creek headwaters - Picnic Creek AZ15020001-017 A&Wc, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Near Nutrioso, Arizona LCNUT012.17 100936	2000 - 1 full suite 2001 - 3 full suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.1 - 9.2 (64 - 91%)	2 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in the final assessment.
			Turbidity (former standard) NTU	10 (A&Wc)	9 - 34	1 of 4		

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row A&Wc Not attaining FC Attaining FBC Attaining AgI Attaining AgL Attaining	2000-2001 4 samples	Turbidity (former standard) NTU	10 (A&Wc)	9 - 34	1 of 4	Inconclusive (Not attaining)	ADEQ collected 4 samples in 2000-2001. A turbidity TMDL was approved by EPA in 2000. Assessed as "not attaining" and placed on the Planning List for TMDL follow-up monitoring.
Porter Creek headwaters - Show Low Creek AZ15020005-246 A&Wc, FC, FBC, AgL	ADEQ Ambient Monitoring Above Scott Reservoir LCPRT001.23 101415	2002 - 1 full suite	Turbidity (former standard) NTU	10 (A&Wc)	14	1 of 1		Lab reporting limits for copper samples were too high to use results for assessment.
	AGFD Ambient Monitoring Above Scott Reservoir LCPRT001.17	1998 - 1 field, nutrients	No exceedances					
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive	1998-2002 2 sampling events	Turbidity (former standard) NTU	10 (A&Wc)	14	1 of 1	Inconclusive (see comment)	Insufficient monitoring data to assess. Placed on the Planning List due to former turbidity standard exceedance. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.
Rio de Flag Flagstaff WWTP - San Francisco Wash AZ15020015-004B A&Wedw, PBC	ADEQ Ambient Monitoring At Doney Park, Flagstaff LCRDF002.97 10127	2000 - 1 full suite 2001 - 3 full suites	Turbidity (former standard) NTU	50 (A&Wedw)	4 - 71	1 of 4		
	Summary Row A&Wedw Inconclusive PBC Attaining	2000 - 2001 4 sampling events	Turbidity (former standard) NTU	50 (A&Wedw)	4 - 71	1 of 4	Inconclusive (see comment)	ADEQ collected 4 samples in 2000-2001. Assessed as "attaining some uses" and placed on the Planning List due to exceedance of former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.
Show Low Creek headwaters - Linden Wash AZ15020005-012 A&Wc, FC, FBC, AgI, AgL	AGFD Routine Monitoring Above Show Low Lake LCSHL017.18	1998 - 1 field, nutrients	No exceedances					
	ADEQ Ambient Monitoring Near Show Low, AZ LCSHL011.06 100340	2000 - 1 full suite 2001 - 3 full suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.0 - 8.7 (73 - 110%)	1 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in the final assessment.
			Turbidity (former standard) NTU	10 (A&Wc)	15 - 58	3 of 3		
	AGFD Routine Monitoring Above Fools Hollow Lake LCSHL010.47	1998 - 1 field, nutrients	No exceedances					
	Summary Row A&Wc Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining	1998- 2001 6 samples 5 sampling events	Turbidity (former standard) NTU	10 (A&Wc)	15 - 58	3 of 5	Inconclusive (see comment)	AGFD and ADEQ collected 6 samples at 3 sites in 1998-2001. Assessed as "attaining some uses" and placed on the Planning List due to exceedance of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.

TABLE 11. LITTLE COLORADO - SAN JUAN WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Silver Creek headwaters - Show Low Creek AZ15020005-013 A&Wc, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Below AGFD hatchery LCSIL028.19 101125	2000 - 1 full suite 2001 - 3 full suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.5 - 10.0 (79 - 121%)	1 of 4		Lab reporting limits for dissolved copper were too high to use results for assessment.
			Turbidity (former standard) NTU	10 (A&Wc)	8 - 19.4	1 of 4		
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **AgI Attaining** **AgL Attaining**	**2000 - 2001** **4 sampling events**	**Dissolved oxygen** **mg/L**	**> 7.0** **(90% saturation)** **A&Wc)**	**6.5 - 10.0** **(70 - 121%)**	**1 of 4**	**Inconclusive**	**ADEQ collected 4 samples in 2000-2001. Assessed as "attaining some uses" and placed on the Planning List due to low dissolved oxygen, a missing core parameter (dissolved copper), and an exceedance of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
			Turbidity (former standard) **NTU**	**10** **(A&Wc)**	**8 - 19.4**	**1 of 4**	**Inconclusive (see comment)**	
Silver Creek Seven-Mile Draw - Little Colorado River AZ15020005-001 A&Wc, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Near Snowflake LCSIL004.78 100337	2002 - 1 full suite	Turbidity (former standard) NTU	10 (A&Wc)	136	1 of 1		
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**2002** **1 sampling event**	**Turbidity (former standard)** **NTU**	**10** **(A&Wc)**	**136**	**1 of 1**	**Inconclusive (see comment)**	**Insufficient monitoring data to assess.** **Placed on the Planning List due to former turbidity standard exceedances. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
LAKE MONITORING DATA								
Ashurst Lake AZL15020015-0090 A&Wc, FC, FBC, AgI, AgL	ADEQ Lakes Program LCASH-A (at dam) 100973	2000 - 1 full + 1 partial suite 2001 - 2 partial suites	Turbidity (former standard) NTU	10 (A&Wc)	114 - 120	3 of 3		Lab reporting limits for copper were too high to use results for assessment.
	ADEQ Lakes Program LCASH-B (mid lake) 101294	2001 - 1 full suite	Turbidity (former standard) NTU	10 (A&Wc)	116	1 of 1		
	ADEQ Lakes Program LCASH-BR (boat ramp) 101327	2001 - 1 *Escherichia coli*	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Inconclusive** **AgI Attaining** **AgL Attaining**	**2000-2001** **6 samples** **4 sampling events**	**Turbidity (former standard)** **NTU**	**10** **(A&Wc)**	**114 - 120**	**4 of 4**	**Inconclusive (see comment)**	**ADEQ collected 6 samples in 2000-2001. Assessed as "attaining some uses" and placed on the Planning List due to:** **1. Former turbidity standard exceedances. The causes and sources of turbidity will be investigated during the next monitoring cycle for this watershed.** **2. Missing core parameters: *Escherichia coli* and dissolved metals (cadmium, copper, and zinc).**

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Bear Canyon Lake AZ15020008-0130 A&Wc, FC, FBC, AgI, AgL	ADEQ Lakes Program LCBCL-A (deepest) 100969	2000 - 1 full suite 2001 - 3 full suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.6 - 8.0 (79 - 85%)	1 of 4		Lab detection limits for dissolved metals (cadmium, copper, and zinc) were too high to use results for assessments.
			pH SU	6.5 - 9.0 (A&Wc, FBC, AgI, AgL)	5.8 - 6.8	3 of 4		
			Selenium µg/L	2.0 (A&Wc chronic)	<2 - 3	1 of 4		
	ADEQ Lakes Program LCBCL-B (mid lake) 100970	2000 - 1 partial suite	Dissolved oxygen mg/L	> 7 (90% saturation) (A&Wc)	6.7 (80%)	1 of 1		
			pH SU	6.5 - 9.0 (A&Wc, FBC, AgI, AgL)	8.1	1 of 1		
	ADEQ Lakes Program LCBCL-BR (boat ramp) 100970	2001 - 1 *Escherichia coli*	No exceedances					
	Summary Row A&Wc Inconclusive FC Attaining FBC Inconclusive AgI Inconclusive AgL Inconclusive	**2000 - 2001** **5 samples** **4 sampling events**	**Dissolved oxygen** **mg/L**	**> 7.0** **(90% saturation)** **(A&Wc)**	**6.6 - 8.0** **(79 - 85%)**	**2 of 5**	**Inconclusive**	**ADEQ collected 5 samples at 3 sites in 2000 - 2001. Assessed as "attaining some uses" and placed on the Planning List due to low dissolved oxygen, pH and selenium exceedances, and missing core parameters: *Escherichia coli* and dissolved metals (copper, cadmium, and zinc).**
			pH **SU**	**6.5 - 9.0** **(A&Wc, FBC, AgI, AgL)**	**5.8 - 6.8**	**4 of 5**	**Inconclusive**	
			Selenium **µg/L**	**2.0** **(A&Wc chronic)**	**<2 - 3**	**1 of 4 events**	**Inconclusive**	
Blue Ridge Reservoir AZL15020008-0200 A&Wc, FC, FBC, AgI, AgL	ADEQ Lakes Program LCBRR-A (deepest) 100974	2000 - 1 partial suite 2001 - 1 full + 2 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.7 - 11.0 (73 - 121%)	1 of 3		Lab reporting limits for dissolved metals (cadmium, copper, and zinc) were too high to use results for assessment.
	ADEQ Lakes Program LCBRR-C 101293	2001 - 1 partial suite	No exceedances					
	Summary Row A&Wc Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining	**2000 - 2001** **5 samples** **4 sampling events**	**Dissolved oxygen** **mg/L**	**> 7.0** **(90% saturation)** **(A&Wc)**	**6.7 - 11.0** **(73 - 121%)**	**1 of 3**	**Inconclusive**	**ADEQ collected 5 samples at 2 sites in 2000 - 2001. Assessed as "attaining some uses" and placed on the Planning List due to low dissolved oxygen and missing core parameters: *Escherichia coli* and dissolved metals (copper, cadmium, and zinc).**
Bunch Reservoir AZL15020001-0230 A&Wc, FC, FBC, AgI, AgL	AGFD Ambient Monitoring LCBUN - MID LAKE	2001 - 3 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.8 - 8.2 (66 - 99%)	2 of 3		
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive	**2001** **3 sampling events**	**Dissolved oxygen** **mg/L**	**> 7.0** **(90%saturation)** **(A&Wc)**	**5.8 - 8.2** **(66 - 90%)**	**2 of 3**	**Inconclusive**	**AGFD collected 3 samples in 2001. Assessed as "inconclusive" and placed on the Planning List due to low dissolved oxygen and missing core parameters: turbidity, *Escherichia coli*, total boron, dissolved metals (copper, cadmium, and zinc), and total metals (mercury and lead).**

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Carnero Lake AZL15020001-0260 A&Wc, FC, FBC, AgL	AGFD Ambient Monitoring LCCAR-MID LAKE	2001 - 3 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	3.9 - 7.5 (55 - 97%)	1 of 3		
			pH SU	6.5 - 9.0 (A&Wc, FBC, AgL)	8.3 - 9.9	2 of 3		
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**2001** **3 sampling events**	**Dissolved oxygen mg/L**	**> 7.0 (90% saturation) (A&Wc)**	**3.9 - 7.5 (55 - 97%)**	**1 of 3**	**Inconclusive**	**AGFD collected 3 samples in 2001. Assessed as "inconclusive" and placed on the Planning List due to low dissolved oxygen, high pH, and missing core parameters: turbidity, *Escherichia coli*, dissolved metals (copper, cadmium, and zinc), and total metals (mercury and lead).**
			pH SU	**6.5 - 9.0 (A&Wc, FBC, AgL)**	**8.3 - 9.9**	**2 of 3**	**Inconclusive**	
Cholla Lake AZL15020008-0320 A&Ww, FC, FBC	AGFD Ambient Monitoring LCCHO - MID LAKE	1999 - 3 partial suites 2001 - 1 partial suite	No exceedances					Lab reporting limits for mercury were too high to use results for assessment.
	AGFD Ambient Monitoring Warmwater inflow LCCHO - INFLOW	1999 - 3 partial suites 2001 - 1 partial suite	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive**	**1999-2001** **8 samples** **4 sampling events**	**No exceedances**					**AGFD collected 8 samples in 1999-2001. Assessed as "inconclusive" and placed on the Planning List due to a fish kill in 2002 and missing core parameters: turbidity, *Escherichia coli*, total mercury, and dissolved metals (copper, cadmium, and zinc).**
Clear Creek Reservoir AZL15020008-0340 A&Wc, FC, FBC, DWS, AgI, AgL	AGFD Ambient Monitoring Above Forest Road #99 LCCCR - 1	1999 - 3 partial suites	No exceedances					
	AGFD Ambient Monitoring Dam Site LCCCR - DAM SITE	1999 - 2 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.3 - 7.6 (79 - 99%)	1 of 2		
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **AgI Inconclusive** **AgL Attaining**	**1999** **5 samples** **3 sampling events**	**Dissolved oxygen mg/L**	**> 7.0 (90% saturation) (A&Wc)**	**6.3 - 7.6**	**1 of 5**	**Inconclusive**	**AGFD collected 5 samples at 2 sites in 1999. Assessed as "attaining some uses" and placed on the Planning List due to one low dissolved oxygen result and missing core parameters: turbidity, *Escherichia coli*, total fluoride, total boron, dissolved metals (copper, cadmium, and zinc), and total mercury.**
Kinnikinick Lake AZL15020015-0730 A&Wc, FC, FBC, AgL	ADEQ Lakes Program LCKIN - A (deepest) 100971	2000 - 1 partial suite 2001 - 2 full + 1 partial suites 2002 - 1 partial suite	Turbidity (former standard) NTU	10 (A&Wc)	66 - 71	5 of 5		Lab reporting limits for dissolved cadmium and copper were too high to use results for assessment.
			Selenium µg/L	2.0 (A&Wc chronic)	<2 - 3	1 of 4		
	ADEQ Lakes Program LCKIN - B (mid lake) 100972	2000 - 1 partial suite 2001 - 1 partial suite	Turbidity (former standard) NTU	10 (A&Wc)	60 - 69	2 of 2		
	ADEQ Lakes Program LCKIN - BR (boat ramp) 100972	2001 - 1 *Escherichia coli*	No exceedances					

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STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row A&Wc Inconclusive FC Attaining FBC Inconclusive AgL Attaining	**2000 - 2002** **8 samples** **4 sampling events**	**Turbidity (former standard) NTU**	**10 (A&Wc)**	**60 - 71**	**7 of 7**	**Inconclusive**	**ADEQ collected 8 samples at 3 sites in 2000 - 2002. Assessed as "attaining some uses" and placed on the Planning List due to:** **1. Selenium exceedances.** **2. Missing core parameters: dissolved metals (copper, cadmium, and zinc) and *Escherichia coli*.** **3. Former turbidity standard exceedances. The causes and sources of turbidity will be investigated during the next monitoring cycle for this watershed.**
			Selenium µg/L	**2 (A&Wc chronic)**	**<2 - 3**	**1 of 4 events**	**Inconclusive**	
Lake Mary – (Upper) AZL15020015-0900 A&Wc, FC, FBC, DWS, AgL	ADEQ Lakes Program LCMAU - A (deepest) 100029	2002 - 1 partial suite	Turbidity (former standard) NTU	10 (A&Wc)	70	1 of 1		Lab reporting limits for dissolved cadmium and copper were too high to use results for assessment. All samples collected on the same date.
	ADEQ Lakes Program LCMAU - B (mid lake) 101312	2002 - 1 partial suite	Turbidity (former standard) NTU	10 (A&Wc)	67	1 of 1		
	ADEQ Lakes Program LCMAU - C 101314	2002 - 1 partial suite	Turbidity (former standard) NTU	10 (A&Wc)	69	1 of 1		
	Summary Row A&Wc Inconclusive FC Impaired* FBC Inconclusive DWS Inconclusive AgL Inconclusive	**2002** **3 samples** **1 sampling event**	**Turbidity (former standard) NTU**	**10 A&Wc**	**67 - 70**	**3 of 3 samples (1 of 1 event)**	**Inconclusive (see comment)**	***Assessed as "impaired" due to mercury in fish tissue. EPA placed this reach on the 2002 303(d) List because mercury in fish tissue led to a fish consumption advisory in 2002. Once listed, the lake cannot be delisted until a TMDL is complete or there are sufficient data collected to indicate that mercury in fish tissue is no longer a concern (fish consumption advisory is removed).** **Also on the Planning List due to:** **1. Former turbidity standard exceedances. The causes and sources of turbidity will be investigated during the next monitoring cycle for this watershed.** **2. Insufficient monitoring data.**
Lee Valley Reservoir AZL15020001-0770 A&Wc, FC, FBC, AgI, AgL	AGFD Ambient Monitoring LCLEE	1998 - 3 partial suites	No exceedances					Lab reporting limits for dissolved cadmium and copper were too high to use results for assessment.
	ADEQ Lakes Program LCLEE - A (deepest) 101356	2001 - 1 partial suite 2002 - 2 partial suites	No exceedances					
	ADEQ Lakes Program LCLEE - SH (shoreline) 101357	2002 - 2 *Escherichia coli*	No exceedances					
	Summary Row A&Wc Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining	**1998 - 2002** **8 samples** **6 sampling events**	**No exceedances**					**ADEQ and AGFD collected 8 samples in 1998 - 2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters: *Escherichia coli* and dissolved metals (cadmium and copper).**
Long Lake (Lower) AZL15020008-0820 A&Wc, FC, FBC, AgI, AgL	AGFD Ambient Monitoring North end LCLLL - North	1998 - 3 partial suites	No exceedances					
	AGFD Ambient Monitoring South Cove LCLLL - South	1998 - 3 partial suites 2001 - 1 partial suite	No exceedances					

TABLE 11. LITTLE COLORADO - SAN JUAN WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**1998 - 2001** **7 samples** **3 sampling events**	**No exceedances**					**AGFD collected 7 samples in 1998 - 2001. Assessed as "inconclusive" and placed on the Planning List due to:** **1. Insufficient seasonal coverage.** **2. Missing core parameters: turbidity, *Escherichia coli*, total boron, total metals (mercury, manganese, copper, and lead), and dissolved metals (copper, cadmium, and zinc).** **3. A fish consumption advisory due to mercury in fish tissue was issued in 2003. (This may be evidence of narrative standards violations.)**
Lyman Lake AZL15020001-0850 A&Wc, FC, FBC, AgI, AgL	AGFD Ambient Monitoring LCLYM - A (dam site)	1998 - 1 partial suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**1997-1998** **1 sampling event**	**No exceedances**					**Reach assessed as "inconclusive" and placed on the Planning List due to:** **1. A fish consumption advisory due to mercury in fish tissue, issued in 2002. (This may be evidence of narrative standards violations.)** **2. Missing all core parameters: turbidity, field pH, *Escherichia coli*, dissolved metals (copper, cadmium, and zinc), and total metals (mercury, copper, and lead).**
Nelson Reservoir AZL15020001-1000 A&Wc FC, FBC, AgI, AgL	AGFD Ambient Monitoring LCNEL - DAM SITE	1998 - 1 partial suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**1998** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**
Rainbow Lake AZL15020005-1170 A&Wc, FC, FBC, AgI, AgL	ADEQ Lakes Program LCRAI - A (deepest) 100069	2002 - 1 full suite	No exceedances					
	ADEQ Lakes Program LCRAI - B (mid lake) 100070	2002 - 1 partial suite	No exceedances					
	ADEQ Lakes Program LCRAI - BR (boad ramp) 101402	2002 - 1 *Escherichia coli*	No exceedances					
	Summary Row **A&Wc Not attaining** **FC Inconclusive** **FBC Not attaining** **AgI Not attaining** **AgL Not attaining**	**2002** **3 samples** **1 sampling event**	**No exceedances**					**Nutrient TMDL completed in 2000. This lake will remain "not attaining" until there are sufficient data to indicate that dissolved oxygen, pH, and nutrients are supporting designated uses.**
River Reservoir AZL15020001-1220 A&Wc, FC, FBC, AgI, AgL	AGFD Ambient Monitoring LCRIV-MID (mid lake)	2001 - 3 partial suites	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**2001** **3 sampling events**	**No exceedances**					**AGFD collected 3 samples in 2001. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: turbidity, *Escherichia coli*, total boron, total metals (mercury and lead), and dissolved metals (copper, cadmium and zinc).**

TABLE 11. LITTLE COLORADO - SAN JUAN WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Soldiers Annex Lake AZL15020008-1430 A&Wc FC, FBC, AgI, AgL	AGFD Ambient Monitoring LCNEL - DAM SITE	2001 - 1 partial suite	No exceedances					
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive	**2001** **1 sampling event**	**No exceedances**					**Assessed as "inconclusive" and placed on the Planning List due to:** **1. Insufficient monitoring.** **2. A fish consumption advisory due to mercury in fish tissue, issued in 2003. (This may be evidence of narrative standards violations.)**
Soldiers Lake AZ15020008-1440 A&Wc, FC, FBC, AgI, AgL	ADEQ Priority Pollutant Program – fish tissue	Data not shown No water quality data						
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive							**Lake assessed as "inconclusive" and placed on the Planning List due to:** **1. Insufficient monitoring.** **2. A fish consumption advisory due to mercury in fish tissue, issued in 2003. (This may be evidence of narrative standards violations.)**
Tunnel Reservoir AZL15020001-1550 A&Wc FC, FBC, AgI, AgL	AGFD Ambient Monitoring LCNEL - MID LAKE	2001 - 3 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	4 - 8.1 (56 - 97%)	1 of 3		
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive	**2001** **3 sampling events**	**Dissolved oxygen mg/L**	**> 7.0 (90% saturation) (A&Wc)**	**4 - 8.1 (56 - 97%)**	**1 of 3**	**Inconclusive**	**AGFD collected 3 samples in 2001. Assessed as "inconclusive" and placed on the Planning List due to low dissolved oxygen and missing core parameters: turbidity, *Escherichia coli*, total boron, total metals (mercury, manganese, and lead), and dissolved metals (copper, cadmium, and zinc).**
Woods Canyon Lake AZL15020010-1700 A&Wc, FC, FBC, DWS, AgI, AgL	ADEQ Lakes Program LCWCL - A (deepest) 100092	2000 - 1 partial suite 2001 - 2 full + 1 partial suite	No exceedances					
	ADEQ Lakes Program LCWCL - B (mid lake) 10093	2000 - 1 full suite 2001 - 2 full suites	No exceedances					
	ADEQ Lakes Program LCWCL - BR (boat ramp) 101324	2001 - 1 *Escherichia coli*	No exceedances					
	Summary Row A&Wc Inconclusive FC Attaining FBC Inconclusive DWS Attaining AgI Attaining AgL Attaining	**2000 - 2001** **8 samples** **4 sampling events**	**No exceedances**					**ADEQ collected 8 samples at 3 sites in 2001-2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters: *Escherichia coli* and dissolved metals (cadmium, copper, and zinc).**

TABLE 12. LITTLE COLORADO-SAN JUAN WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
LITTLE COLORADO-SAN JUAN WATERSHED – STREAM ASSESSMENTS				
Barbershop Canyon Creek headwaters - East Clear Creek 10 miles AZ15020008-537	A&Wc Inconclusive FC Attaining FBC Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to missing core parameter: dissolved copper.		
Billy Creek headwaters - Show Low Creek 19 miles AZ15020005-019	A&Wc Inconclusive FC Attaining FBC Inconclusive AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. *Escherichia coli* exceedance (1 of 4 sampling events). 2. Former turbidity standard exceedances (4 of 6 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. 3. Missing core parameter: dissolved copper.		EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Brown Creek headwaters - Silver Creek 15 miles AZ15020005-016	A&Wc Inconclusive FC Inconclusive FBC Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 2 samples).		
Buck Springs Canyon Creek headwaters - Leonard Canyon 7 miles AZ15020008-557	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List. No current data. Added in 2002 due to: 1. Turbidity exceedance (1 of 1 sample). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. 2. Low pH (1 of 1 sample). 3. Missing core parameters.		
Chevelon Creek headwaters - West Chevelon Creek 32 miles AZ15020010-006	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List. No current data. Added in 2002 due to: 1. Low dissolved oxygen. 2. Missing core parameters.		
Chevelon Creek Black Canyon - Little Colorado River 19 miles AZ15020010-001	A&Wc Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to former turbidity standard exceedances (4 of 4 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Colter Creek headwaters - Nutrioso Creek 9 miles AZ15020001-293	A&Wc Inconclusive FC Attaining FBC Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to missing core parameter: dissolved copper.		
East Clear Creek headwaters - Yeager Canyon 38 miles AZ15020008-009	A&Wc Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. Low dissolved oxygen (2 of 4 samples). 2. Missing core parameter: dissolved copper.		

TABLE 12. LITTLE COLORADO-SAN JUAN WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Fish Creek headwaters - Little Colorado River 9 miles AZ15020001-211	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Insufficient monitoring data to assess (only 1 sample). 2. Mercury exceedance (1 of 1 sample).		
Hall Creek headwaters - Little Colorado River 14 miles AZ15020001-012	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Lee Valley Creek Lee Valley Reservoir - East Fork Little Colorado River 3 miles AZ15020001-232B	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Little Colorado River West Fork Little Colorado - Water Canyon Creek 20 miles AZ15020001-011	A&Wc Not attaining FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 4A – Not attaining	On the Planning List for: 1. Turbidity TMDL follow-up monitoring. Turbidity still exceeding former standard in 18 of 50 samples. Turbidity and suspended sediment concentration (SSC) monitoring will be scheduled during the next monitoring cycle for this watershed. 2. Missing core parameters: dissolved metals (copper and cadmium).		A turbidity TMDL was approved by EPA in 2002 for the two reaches immediately downstream. Implementation of strategies identified in that TMDL should also bring this reach into compliance with its standards. Therefore, assessed as "not attaining" and placed on the Planning List for TMDL follow-up monitoring.
Little Colorado River Water Canyon Creek - Nutrioso Creek 4 miles AZ15020001-010	A&Wc Not attaining FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 4A — Not attaining	On the Planning List. No current data. Added in 2002 for turbidity TMDL follow-up monitoring (turbidity exceedances then in 5 of 6 samples). Turbidity and suspended sediment concentration (SSC) monitoring will be scheduled during the next monitoring cycle for this watershed.		A turbidity TMDL was approved by EPA in 2002. Placed on the Planning List in 2002 for TMDL follow-up monitoring.
Little Colorado River Nutrioso Creek - Camero Wash 12 miles AZ15020001-009	A&Wc Not attaining FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 4A – Not attaining	On the Planning List for: 1. *Escherichia coli* exceedance (1 of 12 sampling events, occurred in 2000). 2. Turbidity TMDL follow-up monitoring. Former turbidity standard exceeded in 9 of 12 samples. Turbidity and suspended sediment concentration (SSC) monitoring will be scheduled during the next monitoring cycle for this watershed.		A turbidity TMDL was approved by EPA in 2002. Placed on the Planning List for TMDL follow-up monitoring.
Little Colorado River unnamed tributary 15020001-021 to Lyman Lake 3 miles AZ15020001-005	A&Wc Not attaining FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 4A – Not attaining	On the Planning List due to: 1. *Escherichia coli* exceedance (1 of 3 sampling events). 2. Turbidity TMDL follow up monitoring. Former turbidity standard exceeded in 3 of 3 samples. Turbidity and suspended sediment concentration (SSC) monitoring will be scheduled during the next monitoring cycle for this watershed.		A turbidity TMDL was approved by EPA in 2002 for two reaches only 3.2 miles upstream (15020001-010 and -009). Implementation of strategies identified in that TMDL should also bring this reach into compliance with its standards. Therefore, assessed as "not attaining" and placed on the Planning List for TMDL follow-up monitoring.
Little Colorado River HUC 15020001 boundary - unnamed tributary 15020002-025 14 miles AZ15020002-024	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 2 samples).		

TABLE 12. LITTLE COLORADO-SAN JUAN WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Little Colorado River Silver Creek - Carr Wash 6 miles AZ15020002-004	A&Wc Inconclusive FC Attaining FBC Impaired DWS Inconclusive AgI Attaining AgL Attaining Category 5 – Impaired	On the Planning List due to: 1. Lead exceedances (3 of 12 samples). 2. Former turbidity standard exceedances (8 of 8 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.	Add *Escherichia coli* to the 303(d) List due to exceedances in 2 of 9 sampling events.	EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Little Colorado River Zion Reservoir - Concho Creek 7 miles AZ15020002-016	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Suspended sediment concentration (SSC) geometric mean exceedance. 2. Missing core parameters (only SSC data were collected).		
Little Colorado River Porter Tank - McDonalds Wash 17 miles AZ15020008-017	A&Ww Impaired FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to: 1. Missing core parameters (only SSC data was collected).	On the 303(d) List (since 1992) due to copper and silver exceedances. ADEQ initiated a silver and copper TMDL investigation in 2002. Add suspended sediment concentration to the 303(d) List due to 1 of 3 annual geo. mean exceedances.	
Little Colorado River, East Fork headwaters - Hall Creek 11 miles AZ15020001-230	A&Wc Inconclusive FC Attaining FBC Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to missing core parameters: dissolved metals (copper and cadmium).		
Little Colorado River, South Fork headwaters - Little Colorado River 12 miles AZ15020001-027	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Little Colorado River, West Fork headwaters - Government Springs 8 miles AZ15020001-013A Unique Water	A&Wc Inconclusive FC Attaining FBC Attaining Category 2 — Attaining Some Uses	On the Planning List due to missing core parameters: dissolved metals (copper and cadmium).		
Little Colorado River, West Fork Government Springs - Little Colorado River 1 mile AZ15020001-013B	A&Wc Inconclusive FC Attaining FBC Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. Acute and chronic copper exceedance (1 of 1 sampling event). 2. Missing core parameters: dissolved metals (copper and cadmium).		
Mineral Creek headwaters - Concho Creek 26 miles AZ15020002-648	A&Wc Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. Low dissolved oxygen (1 of 4 samples). 2. Missing core parameter: dissolved copper.		
Nutrioso Creek headwaters - Picnic Creek 27 miles AZ15020001-017	A&Wc Not attaining FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 4A – Not attaining	On the Planning List for turbidity TMDL follow-up monitoring. Turbidity exceeded the former standard in 1 of 4 samples. Turbidity and suspended sediment concentration (SSC) monitoring will be scheduled during the next monitoring cycle for this watershed.		A turbidity TMDL was approved by EPA in 2000. Added to the Planning List in 2002 for TMDL follow-up monitoring.

TABLE 12. LITTLE COLORADO-SAN JUAN WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Nutrioso Creek Picnic Creek - Little Colorado River 4 miles AZ15020001-015	A&Wc Not attaining FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 4A – Not attaining	On the Planning List for: 1. Turbidity TMDL follow-up monitoring. Turbidity and suspended sediment concentration (SSC) monitoring will be scheduled during the next monitoring cycle for this watershed. 2. Insufficient monitoring (no current monitoring data).		A turbidity TMDL was approved by EPA in 2000. Added to the Planning List in 2002 for TMDL follow-up monitoring.
Porter Creek headwaters - Show Low Creek 4 miles AZ15020005-246	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Insufficient monitoring data to assess (only 2 samples). 2. Former turbidity standard exceedance (1 of 1 sample). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		
Rio de Flag Flagstaff WWTP - San Francisco Wash 23 miles AZ15020015-004B	A&Wedw Inconclusive PBC Attaining Category 2 – Attaining Some Uses	On the Planning List due to former turbidity standard exceedance (1 of 4 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		
Show Low Creek headwaters - Linden Wash 41 miles AZ15020005-012	A&Wc Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to former turbidity standard exceedances (3 of 5 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reech on the 2004 303(d) List due to turbidity.
Silver Creek headwaters - Show Low Creek 34 miles AZ15020005-013	A&Wc Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. Low dissolved oxygen (1 of 4 samples). 2. Missing core parameter: dissolved copper. 3. Former turbidity standard exceedance (1 of 4 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		
Silver Creek Seven-Mile Draw - Little Colorado River 9 miles AZ15020005-001	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Insufficient monitoring data to assess (only 1 sample). 2. Exceedance of the former turbidity standard (1 of 1 sample). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		
Walnut Creek Pine Lake - Rainbow Lake 9 miles AZ15020005-238	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	No current data. Added to the Planning List in 2002 due to missing core parameters.		
Willow Creek headwaters - East Clear Creek 32 miles AZ15020008-011	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	No current data. Added to the Planning List in 2002 due to missing core parameters.		
Willow Springs Canyon Creek headwaters - Chevelon Creek 9 miles AZ15020010-240 (previously listed as Willow Spring Creek)	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to missing core parameters.		

TABLE 12. LITTLE COLORADO-SAN JUAN WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Woods Canyon Creek headwaters - Chevelon Creek 13 miles AZ15020010-084	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to low dissolved oxygen (1 of 2 samples).		
LITTLE COLORADO-SAN JUAN WATERSHED – LAKE ASSESSMENTS				
Ashurst Lake 201 acres AZL15020015-0090	A&Wc Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 2 – Attaining Some Uses Trophic Status – Eutrophic	On the Planning List due to: 1. Missing core parameters: *Escherichia coli* and dissolved metals (copper, cadmium, and zinc). 2. Former turbidity standard exceedances (4 of 4 samples). Causes and sources of turbidity will be investigated during the next monitoring cycle for this watershed.		EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Bear Canyon Lake 55 acres AZL15020008-0130	A&Wc Inconclusive FC Attaining FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 2 – Attaining Some Uses Trophic Status – Mesotrophic	On the Planning List due to: 1. Low dissolved oxygen (2 of 5 samples). 2. Low pH (4 of 5 samples). 3. Chronic selenium exceedance (1 of 4 sampling events). 4. Missing core parameters: *Escherichia coli* and dissolved metals (copper, cadmium, and zinc).		ADEQ anticipates that EPA will place this lake on the 2004 303(d) List for pH (4 of 5 samples exceeded). For the 2002 303(d) List, EPA determined that 3 or more exceedances with less than 10 samples were sufficient to list a water as "impaired," although Arizona's Impaired Water Identification Rule would require a minimum of 5 exceedances in 20 samples.
Black Canyon Lake 37 acres AZ15020010-0180	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic Status not calculated	On the Planning List due to: 1. A fish kill in 2002 related to the Rodeo-Chediski Fire. This may be evidence of narrative standards violations. Monitoring is needed to determine long-term negative impacts from the fire. 2. No current monitoring data.		
Blue Ridge Reservoir 293 acres AZL15020008-0200	A&Wc Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 2 – Attaining Some Uses Trophic Status – Mesotrophic	On the Planning List due to: 1. Low dissolved oxygen (1 of 3 samples). 2. Missing core parameters: *Escherichia coli* and dissolved metals (copper, cadmium, and zinc).		
Bunch Reservoir 64 acres AZL15020001-0230	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 — Inconclusive Trophic Status not calculated	On the Planning List due to: 1. Low dissolved oxygen (2 of 3 samples). 2. Missing core parameters: *Escherichia coli*, dissolved metals (copper, cadmium, and zinc), total boron, total metals (mercury and lead), and turbidity.		
Camero Lake 67 acres AZL15020001-0260	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive Trophic Status not calculated	On the Planning List due to: 1. Low dissolved oxygen (1 of 3 samples). 2. High pH (2 of 3 samples). 2. Missing core parameters: *Escherichia coli*, turbidity, dissolved metals (copper, cadmium, and zinc), and total metals (mercury and lead).		

TABLE 12. LITTLE COLORADO-SAN JUAN WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Cholla Lake 130 acres AZL15020008-0320	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 — Inconclusive Trophic status – Hypereutrophic	On the Planning List due to 1. Missing core parameters: *Escherichia coli*, turbidity, dissolved metals (copper, cadmium, and zinc), and total mercury. 2. Fish kill in 2002 was related to resuspension of sediment nutrient loads. This may be evidence of a narrative standards violations.		
Clear Creek Reservoir 29 acres AZL15020008-0340	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive Agl Inconclusive AgL Attaining Category 2 – Attaining Some Uses Trophic status – Eutrophic	On the Planning List due to: 1. Low dissolved oxygen (1 of 5 samples). 1. Missing core parameters: *Escherichia coli*, turbidity, dissolved metals (copper, cadmium, and zinc), total fluoride, total boron, and total mercury.		
Kinnikinick Lake 114 acres AZL15020015-0730	A&Wc Inconclusive FC Attaining FBC Inconclusive AgL Attaining Category 2 – Attaining Some Uses Trophic status – Eutrophic	On the Planning List due to: 1. Former turbidity standard exceedances (7 of 7 samples). Causes and sources of turbidity will be investigated during the next monitoring cycle for this watershed. 2. Chronic selenium exceedance (1 of 4 sampling events). 3. Missing core parameters: *Escherichia coli* and dissolved metals (copper, cadmium, and zinc).		EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Lake Mary (lower) 764 acres AZL15020015-0890	A&Wc Inconclusive FC Impaired FBC Inconclusive AgL Inconclusive Category 5 — Impaired Trophic status not calculated	On the Planning List due to insufficient monitoring data (no current water quality monitoring data).	EPA placed this reach on the 2002 303(d) List due to the mercury fish consumption advisory issued in 2002. EPA's listing was based on violation of a narrative standard. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed the lake cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that mercury in fish tissue is no longer a concern (e.g., fish consumption advisory is removed). ADEQ is currently collecting fish tissue data and investigating potential mercury sources in support of completing a TMDL.	
Lake Mary (upper) 760 acres AZL15020015-0900	A&Wc Inconclusive FC Impaired FBC Inconclusive DWS Inconclusive AgL Inconclusive Category 5 – Impaired Trophic status – Eutrophic	On the Planning List due to: 1. Insufficient monitoring data to assess (only 1 sampling event). 2. Exceedance of the former turbidity standard (1 out of 1 sampling event). Causes and sources of turbidity will be investigated during the next monitoring cycle for this watershed.	EPA placed this reach on the 2002 303(d) List due to the mercury fish consumption advisory issued in 2002. EPA's listing was based on a narrative standard violation. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed the surface water cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that mercury in fish tissue is no longer a concern (e.g., fish consumption advisory is removed). ADEQ is currently collecting fish tissue data and investigating potential mercury sources in support of completing a TMDL.	Mercury does not stay in an aqueous state and bioaccumulates rapidly up the food chain. For this assessment, the lab reporting limits were not low enough to assess chronic mercury standards; therefore, the lack of exceedances in the water column does not provide sufficient information about mercury problems in the lake. Recently ADEQ has applied new "clean sampling" techniques that will provide lower detection limits.
Lee Valley Reservoir 38 acres AZL15020001-0770	A&Wc Inconclusive FC Attaining FBC Inconclusive Agl Attaining AgL Attaining Category 2 — Attaining Some Uses Trophic status – Hypereutrophic	On the Planning List due to missing core parameters: *Escherichia coli* and dissolved metals (cadmium and copper).		

TABLE 12. LITTLE COLORADO-SAN JUAN WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Long Lake (lower) 323 acres AZL15020008-0820	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List due to: 1. Missing core parameters: turbidity, *Escherichia coli*, total boron, total metals (mercury, manganese, copper, and lead), and dissolved metals (copper, cadmium, and zinc). 2. Insufficient seasonal coverage. 3. Fish consumption advisory issued in 2003 due to mercury in fish tissue may be evidence of a narrative toxic standards violation.		ADEQ anticipates that EPA will place this water on the 2004 303(d) List due to a fish consumption advisory for mercury in fish tissue issued in 2003. For the 2002 303(d) List, EPA placed waters with a fish consumption advisory on the 303(d) List as the advisory was considered adequate evidence of a narrative toxic standards violation.
Lyman Lake 1308 acres AZL15020001-0850	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List due to: 1. Insufficient monitoring data to assess (only 1 sample). 2. A fish consumption advisory issued in 2002 for mercury in fish tissue. This may be evidence of a narrative toxic standards violation.		ADEQ anticipates that EPA will place this water on the 2004 303(d) List due to a fish consumption advisory for mercury in fish tissue issued in 2002. For the 2002 303(d) List, EPA placed waters with a fish consumption advisory on the 303(d) List as the advisory was considered adequate evidence of a narrative toxic standards violation.
McKay Reservoir 12 acres AZL15020001-0007	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List. No current monitoring data. Added in 2002 due to: 1. Low dissolved oxygen (1 of 1 sample). 2. High pH (1 of 1 sample). 3. Missing core parameters.		
Nelson Reservoir 67 acres AZL15020001-1000	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Rainbow Lake 111 acres AZL15020005-1170	A&Wc Not attaining FC Inconclusive FBC Not attaining AgI Not attaining AgL Not attaining Category 4A – Not attaining Trophic status – Eutrophic	On the Planning List for: 1. TMDL follow-up monitoring (nutrients and pH). 2. Insufficient monitoring.		Nutrient and pH TMDLs were approved by EPA in 2000. Placed on the Planning List in 2002 for follow-up monitoring.
River Reservoir 141 acres AZL15020001-1220	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 — Inconclusive Trophic status not calculated	On the Planning List due to missing core parameters: turbidity, *Escherichia coli*, total boron, total metals (mercury, and lead), and dissolved metals (copper, cadmium, and zinc).		
Soldiers Annex Lake 122 acres AZL15020008-1430	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic Status not calculated	On the Planning List due to: 1. Insufficient monitoring data to assess (only 1 sample). 2. A fish consumption advisory issued in 2003 for mercury in fish tissue. This may be evidence of a narrative toxic standards violation.		ADEQ anticipates that EPA will place this water on the 2004 303(d) List due to a fish consumption advisory for mercury in fish tissue issued in 2003. For the 2002 303(d) List, EPA placed waters with a fish consumption advisory on the 303(d) List as the advisory was considered adequate evidence of a narrative toxic standards violation.

TABLE 12. LITTLE COLORADO-SAN JUAN WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS TABLE				
SURFACE WATER DESCRIPTION	**2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS**	**2004 PLANNING LIST**	**STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST**	**OTHER INFORMATION**
Soldiers Lake 28 acres AZ15020008-1440	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive Trophic Status not calculated	On Planning List due to: 1. No current water quality monitoring data. 2. A fish consumption advisory issued in 2003 for mercury in fish tissue. This may be evidence of a narrative toxic standards violation.		ADEQ anticipates that EPA will place this water on the 2004 303(d) List due to a fish consumption advisory for mercury in fish tissue issued in 2003. For the 2002 303(d) List, EPA placed waters with a fish consumption advisory on the 303(d) List as the advisory was considered adequate evidence of a narrative toxic standards violation.
Tunnel Reservoir 43 acres AZL15020001-1550	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List due to: 1. Missing core parameters: *Escherichia coli*, turbidity, total boron, total metals (mercury, manganese, and lead) and dissolved metals (copper, cadmium, and zinc). 2. Low dissolved oxygen (1 of 3 samples).		
Woods Canyon Lake 70 acres AZL15020010-1700	A&Wc Inconclusive FC Attaining FBC Inconclusive DWS Attaining AgI Attaining AgL Attaining Category 2 — Attaining some uses Trophic status – Eutrophic	On the Planning List due to missing core parameters: *Escherichia coli* and dissolved metals (cadmium, copper, and zinc).		

The Hassayampa River, a tributary of the Gila River, near Wagoner, Arizona.

The Middle Gila Watershed

This watershed encompasses the Gila River drainage area below Coolidge Dam (San Carlos Reservoir) in the east to Painted Rock Dam in the west. It excludes the Santa Cruz River and San Pedro River drainages and the Salt River drainage above Granite Reef Dam. The Salt River drainage area below Granite Reef Dam is included in this watershed (instead of the Salt Watershed), because the canals and diversions at the dam have hydrologically disconnected the system from the rest of the Salt drainage. This area receives little rainfall; therefore, surface water flow is primarily attributed to releases from upstream impoundments, effluent from wastewater treatment plants, and agricultural return flows.

The Phoenix metropolitan area, located in this 12,250 square mile watershed, consists of more than 3,190,700 people (2000 census). Land ownership is approximately: 25% private land, 4% state land, 65% federal land, and 4% Tribal lands. Within the metropolitan area, irrigated agriculture uses are rapidly being displaced by urbanization. Outside of the urbanized area, livestock grazing is the primary land use. Mining (primarily now abandoned) has occurred across this watershed, with more concentration south of Prescott.

Elevations range from 7,400 feet (above sea level) to 1,100 feet at Painted Rocks Reservoir. Most of the watershed is below 5,000 feet in elevation, with low desert flora and fauna and warmwater aquatic communities where perennial waters exist.

The assessment – Assessments were completed for 54 stream reaches and nine lakes in this watershed. Of the 622 stream miles assessed, 109 miles were attaining all uses (six reaches) and 168 miles (18 reaches) were assessed as impaired or not attaining a use. Of the 2,469 lake acres assessed, 220 acres (one lake) were assessed as attaining all uses and 142 acres (four lakes) were assessed as impaired or not attaining a use. All other reaches and lakes assessed were inconclusive or attaining some uses.

A watershed assessment map follows on the next page, illustrating stream and lake assessments by category. The Middle Gila **monitoring table (Table 13)** following the map summarizes the water quality data used in the assessment. It is followed by the **assessment table (Table 14)**, which bridges current assessments with past assessments and impaired water identification. Important to note in this table are comments regarding previous 303(d) lists (what has been added and removed), category designations (1 through 5), references to potential actions by EPA, and status of TMDLs.

Detailed information on how to use these tables is found at the beginning of this chapter (p. IV-1). Assessment methods and criteria can be found in Chapter III.

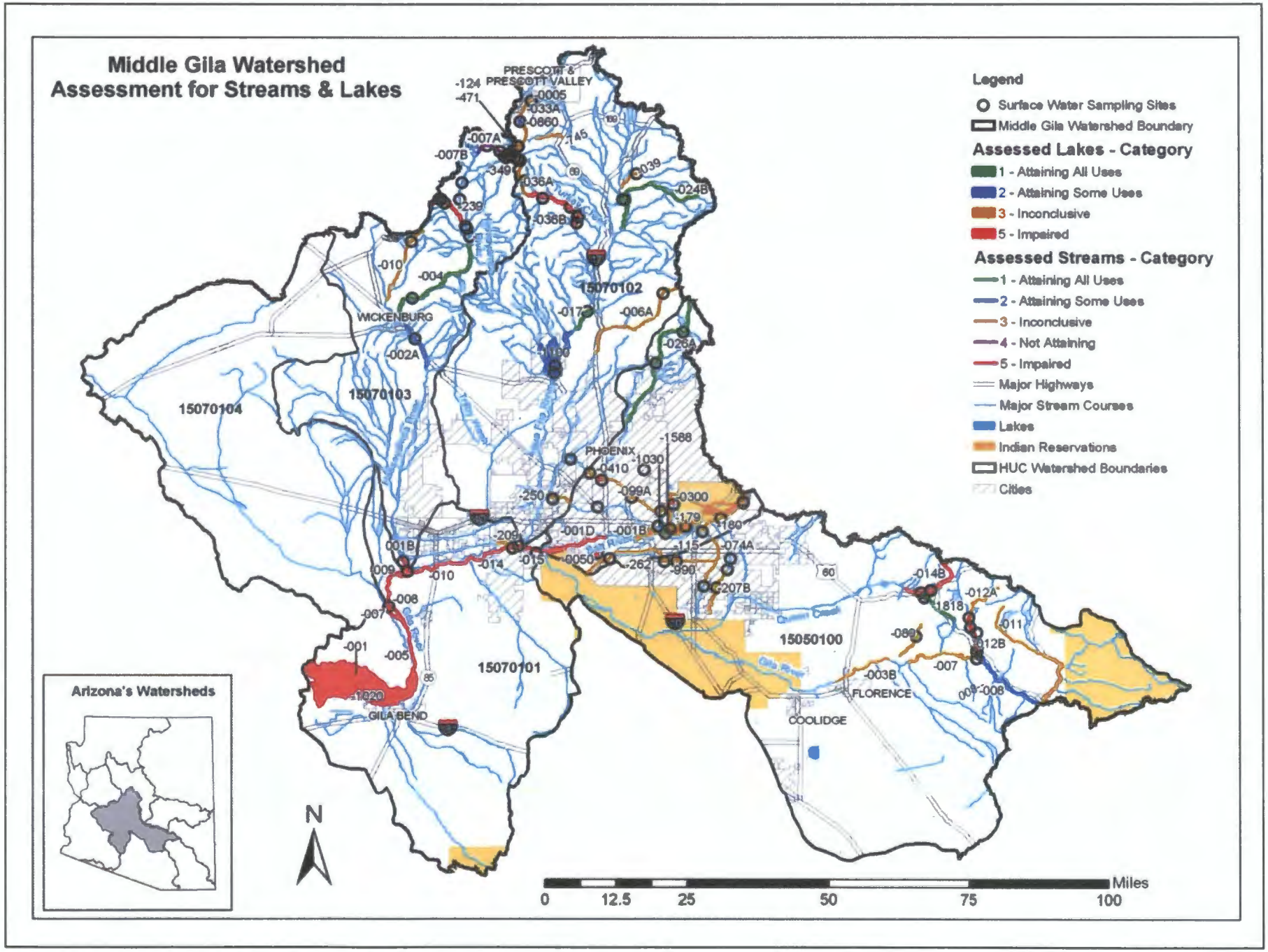

Figure 19. Watershed monitoring and assessments

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
STREAM MONITORING DATA								
Agua Fria River Sycamore Creek - Big Bug Creek AZ15070102-023 A&Ww, FC, FBC, DWS, AgI, AgL	ADEQ Biocriteria Program Upstream of Big Bug Creek MGAFR064.94 100711	1998 - 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring Below USGS gaging station MGAFR064.91 100710	2001 - 1 full suite 2002 - 3 full suites	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **DWS Attaining** **AgI Attaining** **AgL Attaining**	**1998 - 2002** **5 sampling events**	**No exceedances**					**ADEQ collected 5 samples at 2 sites in 1998 - 2002. Assessed as "attaining all uses."**
Agua Fria River Little Squaw Creek - Cottonwood Creek AZ15070102-017 A&Ww, FC, FBC, DWS, AgI, AgL	ADEQ Ambient Monitoring Below Rock Springs Gage MGAFR043.96 101304	2001 - 1 full suite 2002 - 3 full suites	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	1.74 - 8.26 (21 - 116%)	2 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **DWS Attaining** **AgI Attaining** **AgL Attaining**	**2001 - 2002** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2001 - 2002. Assessed as "attaining all uses."**
Antelope Creek headwaters - Martinez Creek AZ15070103-010 A&Ww, FC, FBC, AgL	ADEQ Biocriteria Program Above Road Crossing near Stanton MGANT011.29 100713	1998 - 1 partial suite	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**
Arizona Canal Granite Reef Dam - Cholla WTP AZ15060106B-099A DWS, AgI, AgL	SRP Routine Monitoring At Granite Reef Dam MGAZC021.79 SVCA 1-0.0	1998 - 10 partial suites 1999 - 12 partial suites 2000 - 12 partial suites 2001 - 12 partial suites 2002 - 11 partial suites	No exceedances					
	SRP Routine Monitoring At Invergorden (64th Street) MGAZC014.51 SVCA 1-3.9	1998 - 10 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 11 partial suites 2002 - 11 partial suites	No exceedances					
	SRP Routine Monitoring At Squaw Peak Water Treatment Plant MGAZC010.48 SVCA 1-9.3	1998 - 10 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 11 partial suites 2002 - 11 partial suites	No exceedances					

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	SRP Routine Monitoring At Deer Valley Water Treatment Plant MGAZC005.74 SVCA 1-14.5	1998 - 7 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 12 partial suites 2002 - 12 partial suites	No exceedances					
	SRP Routine Monitoring At Cholla Water Treatment Plant MGAZC003.90 SVCA 1-16.6	1998 - 10 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 11 partial suites 2002 - 11 partial suites	No exceedances					
	Summary Row **DWS Inconclusive** **Agl Inconclusive** **AgL Inconclusive**	**1998 - 2002** **286 samples** **57 sampling events**	**No exceedances**					**SRP collected 286 samples at 5 sites in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: total arsenic, total fluoride, and total metals (chromium, copper, lead, manganese, and mercury).**
Arizona Canal Cholla WTP - HUC boundary 15070102 AZ15060106B-099B Agl, AgL	SRP Routine Monitoring At 75th Ave. and Greenway MGAZC001.48 LT1-20.0	1998 - 10 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 11 partial suites 2002 - 11 partial suites	No exceedances					
	Summary Row **Agl Inconclusive** **AgL Inconclusive**	**1998 - 2002** **55 sampling events**	**No exceedances**					**SRP collected 55 samples in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: field pH and total metals (copper, lead, and manganese).**
Arnett Creek headwaters - Queen Creek AZ15050100-1818 A&Ww, FC, FBC (tributary rule)	ADEQ Ambient Monitoring Near town of Superior MGARN001.57 101306	2001 - 1 full suite 2002 - 3 full suites	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	3.4 - 9.1 (44 - 104%)	2 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining**	**2001 - 2002** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2001 - 2002. Assessed as "attaining all uses."**
Blue John Creek headwaters - Unnamed trib to Lynx Creek AZ15070102-471 A&Wc, FC, FBC (tributary rule)	Weston Solutions for EPA Above unnamed tributary (LC-BSC-JUP) MGBLJ000.05	2001 - 1 metals suite (dissolved only)	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	54.8	1 of 1		Additional samples taken by Weston Solutions showed exceedances but were not used in this assessment. QA/QC protocols were not fulfilled and resulted in estimated values.
				varies by hardness (A&Wc chronic)	54.8	1 of 1		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	81.7	1 of 1		
				varies by hardness (A&Wc chronic)	81.7	1 of 1		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	5060	1 of 1		
				varies by hardness (A&Wc chronic)	5060	1 of 1		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive**	**2001** **1 sampling event**	**Cadmium (dissolved) µg/L**	**varies by hardness (A&Wc acute)**	**54.8**	**1 of 1 event (in 2001)**	**Inconclusive**	**Insufficient monitoring data to assess.** **Placed on the Planning List due to cadmium, copper, and zinc exceedance.**
				varies by hardness (A&Wc chronic)	**54.8**	**1 of 1 event**	**Inconclusive**	
			Copper (dissolved) µg/L	**varies by hardness (A&Wc acute)**	**81.7**	**1 of 1 event (in 2001)**	**Inconclusive**	
				varies by hardness (A&Wc chronic)	**81.7**	**1 of 1 event**	**Inconclusive**	
			Zinc (dissolved) µg/L	**varies by hardness (A&Wc acute)**	**5060**	**1 of 1 event (in 2001)**	**Inconclusive**	
				varies by hardness (A&Wc chronic)	**5060**	**1 of 1 event**	**Inconclusive**	
Buckeye Canal Gila River - South Extension Canal AZ15070101-209 AgI, AgL	USGS NAWQA Site #09514000 Near Avondale MGBKC000.015 101494	1998 - 4 partial suites						
	Summary Row **AgI Inconclusive** **AgL Inconclusive**	**1998** **4 sampling events**	**No exceedances**					**USGS collected 4 samples in 1998. Assessed as "Inconclusive" and placed on the Planning List due to missing core parameters: total boron and total metals (copper, lead, manganese).**
Cash Mine Creek headwaters - Hassayampa River AZ15070103-349 A&Wc, FBC, FC (tributary rule)	Weston Solutions for EPA Above unnamed tributary (HR-MCT-BCSD) MGCSM000.24	2001 - 1 metals suite (dissolved only)	Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	2820	1 of 1		Additional samples taken by Weston Solutions showed exceedances but were not used in this assessment. QA/QC protocols were not fulfilled and resulted in estimated values.
				varies by hardness (A&Wc chronic)	2820	1 of 1		
			Copper (total) µg/L	1300 (FBC)	2820	1 of 1		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	258	1 of 1		
				varies by hardness (A&Wc chronic)	256	1 of 1		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row A&Wc Not attaining FC Inconclusive FBC Not attaining	2001 1 sampling event	Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	2820	1 of 1 event (in 2001)	Inconclusive (Not attaining)	Cadmium, copper, pH, and zinc loadings on this reach were addressed in the TMDL for the Hassayampa River approved by EPA in 2002. Although current data for copper and zinc are "inconclusive," the reach is assessed as "not attaining" until data indicate that all uses are being attained for parameters addressed in the TMDL. Placed on the Planning List for TMDL follow-up monitoring and insufficient sampling events.
				varies by hardness (A&Wc chronic)	2820	1 of 1 event	Inconclusive (Not attaining)	
			Copper (total) µg/L	1300 (FBC)	2820	1 of 1 event	Inconclusive (Not attaining)	
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	256	1 of 1 event (in 2001)	Inconclusive (Not attaining)	
				varies by hardness (A&Wc chronic)	256	1 of 1 event	Inconclusive (Not attaining)	
Cash Mine Creek, unnamed tributary of headwaters - Cash Mine Creek AZ15070103-415 A&Wc, FC, FBC (tributary rule)	Weston Solutions for EPA Below adit, Above McCleur tailings MGUCM000.19	2001 - 1 metals suite (total only)	Lead (total) µg/L	15 (FBC)	38.5	1 of 1		Additional samples taken by Weston Solutions showed exceedances but were not used in this assessment. QA/QC protocols were not fulfilled and resulted in estimated values.
	Weston Solutions for EPA At base of McCleur tailings MGUCM000.10	2001 - 1 metals suite (dissolved only)	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	62.3	1 of 1		
				varies by hardness (A&Wc chronic)	62.3	1 of 1		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	1080	1 of 1		
				varies by hardness (A&Wc chronic)	1080	1 of 1		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	5320	1 of 1		
				varies by hardness (A&Wc chronic)	5320	1 of 1		
	Summary Row A&Wc Not attaining FC Inconclusive FBC Inconclusive	2001 2 samples 1 sampling event	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	62.3	1 of 1 event (in 2001)	Inconclusive (Not attaining)	Cadmium, copper, pH, and zinc loadings on this reach were addressed in the TMDL for the Hassayampa River approved by EPA in 2002. *Although current data for copper and zinc are "inconclusive," the reach is assessed as "not attaining" until data indicate that all uses are being attained for parameters addressed in the TMDL. Placed on the Planning List for TMDL follow-up monitoring and insufficient sampling events.
				varies by hardness (A&Wc chronic)	62.3	1 of 1 event	Inconclusive (Not attaining)	
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	1080	1 of 1 event (in 2001)	Inconclusive (Not attaining)	
				varies by hardness (A&Wc chronic)	1080	1 of 1 event	Inconclusive (Not attaining)	
			Lead (total) µg/L	15 (FBC)	38.5 - 80.6	1 of 1	Inconclusive	
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	5320	1 of 1 event (in 2001)	Inconclusive (Not attaining)	
				varies by hardness (A&Wc chronic)	5320	1 of 1 event	Inconclusive (Not attaining)	

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
Cave Creek headwaters - Cave Creek Dam AZ15060106B-026A A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Near Ashdale Station, Below Seven Springs MGCVE028.41 100527	2001 - 1 full suite 2002 - 3 full suites	No exceedances					
	ADEQ Ambient Monitoring Above Maricopa Mine, Below inactive mine workings MGCVE022.02 101305	2001 - 1 full suite 2002 - 2 full suites	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **AgL Attaining**	**2001 - 2002** **7 samples** **5 sampling events**	**No exceedances**					**ADEQ collected 5 samples at 2 sites in 1998 - 2002. Assessed as "attaining all uses."**
Consolidated Canal 15060106B - above WTP intake AZ15050100-074A DWS, AgI, AgL	SRP Routine Monitoring At Pecos Road (Chandler Water Treatment Plant) MGCNC010.03 SVCA 5-14.0	1998 - 12 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 12 partial suites 2002 - 12 partial suites	No exceedances					
	Summary Row **DWS Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**1998 - 2002** **59 sampling events**	**No exceedances**					**SRP collected 59 samples in 1998 - 2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).**
Eastern Canal WTP below Warner Rd. - terminus AZ15050100-207B AgI, AgL	SRP Routine Monitoring At lateral 14.5 MGESC012.35 SVCA 4-14.2	1998 - 10 partial suites 1999 - 8 partial suites 2000 - 10 partial suites 2001 - 10 partial suites 2002 - 11 partial suites	No exceedances					
	SRP Routine Monitoring At Warner Ave, Tempe MGESC012.13 SVCA 4-11.0	1998 - 12 partial suites 1999 - 11 partial suites 2000 - 10 partial suites 2001 - 11 partial suites 2002 - 12 partial suites	No exceedances					
	SRP Routine Monitoring At Guadalupe (Gilbert Water Treatment Plant) MGESC007.31 SVCA 4-9.0	1998 - 12 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 12 partial suites 2002 - 12 partial suites	No exceedances					
	Summary Row **AgI Inconclusive** **AgL Inconclusive**	**1998 - 2002** **164 samples** **59 sampling events**	**No exceedances**					**SRP collected 164 samples at 3 sites in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).**

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
French Gulch headwaters - Hassayampa River AZ15070103-239 A&Ww, FC, FBC (tributary rule)	Arimetco, Inc. Compliance monitoring Above Zonia Gulch (FGAZG) MGFRG9.84 101819	1998 - 11 metals suites 1999 - 8 metals suites 2000 - 11 field + metals 2001 - 26 field + metals 2002 - 7 field	Arsenic (total) µg/L	50 (FBC)	<40 - 74	1 of 35		
			Copper (total) µg/L	1300 (FBC)	19 - 1600	1 of 36		
			Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 300	23 of 36		
				varies by hardness (A&Ww chronic)	<10 - 300	23 of 36		
			Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<10 - 300	26 of 38		
			Lead (total) µg/L	15 (FBC)	<2 - 20	1 of 35		
			Mercury (total) µg/L	0.6 (FC)	0.2 - 1.7	1 of 36		
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	<50 - 1100	20 of 38		
				varies by hardness (A&Ww chronic)	<50 - 1100	20 of 36		
	Arimetco, Inc. Compliance monitoring and ADEQ TMDL Program Below Zonia Gulch (FGBZG and FGBZG+85) MGFRG008.17 101620	1998 - 6 field, 10 metals 1999 - 1 field, 8 metals 2000 - 11 field + metals 2001 - 28 field, 7 metals 2002 - 12 field	Arsenic (total) µg/L	50 (FBC)	<5 - 94	1 of 43		
			Cadmium (dissolved) µg/L	varies by hardness (A&Ww chronic)	<1 - 9	3 of 7		
			Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 1200	25 of 48		
				varies by hardness (A&Ww chronic)	<10 - 1200	33 of 48		
			Copper (total) µg/L	1300 (FBC)	<10 - 1400	1 of 49		
			Mercury (total) µg/L	0.6 (FC)	<0.2 - 1.1	1 of 42		
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	<50 - 2200	27 of 48		
				varies by hardness (A&Ww chronic)	<50 - 2200	27 of 48		
	Arimetco, Inc. Compliance monitoring and ADEQTMDL Program Above Placerita Gulch (FGAPG) MGFRG004.96 100649	1998 - 1 field, 2 metals 1999 - 1 field, 2 metals 2000 - 1 field, 3 metals 2001 - 2 metals 2002 - 1 field, metals	Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<10 - 33	2 of 10		
			Mercury (total) µg/L	0.6 (FC)	<0.2 - 1.7	1 of 10		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	Arimetco, Inc. Compliance monitoring and ADEQ TMDL Program Below Placerita Gulch (FGBPG) MGFRG004.87 100650	1998 - 2 field, metals 1999 - 1 field, 3 metals 2000 - 1 field, 3 metals 2001 - 1 field, 2 metals 2002 - 1 field, metals	Mercury (total) µg/L	0.6 (FC)	<0.2 - 1.9	1 of 11		
	Summary Row A&Ww Impaired FC Attaining FBC Inconclusive	1998 - 2002 153 samples 69 sampling events	Arsenic (total) µg/L	50 (FBC)	<5 - 94	2 of 101	Attaining	Arimetco collected 146 samples at 4 sites in 1998-2002. ADEQ's TMDL Program collected 7 samples at 3 of these sites in 2001-2002. Assessed as "impaired" due to cadmium, copper and zinc exceedances. Placed on the Planning List due to missing core parameters: dissolved oxygen, *Escherichia coli*, and turbidity/SSC. (Due to changes in the tributary rule, AgI and AgL uses no longer apply to this reach.)
			Cadmium (dissolved) µg/L	varies by hardness (A&Ww chronic)	<1 - 9	3 of 7 samples 3 of 7 events	Impaired	
			Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 1200	48 of 106 samples 27 of 50 events	Impaired	
				varies by hardness (A&Ww chronic)	<10 - 1200	61 of 106 samples 38 of 50 events	Impaired	
			Copper (total) µg/L	1300 (FBC)	<10 - 1600	2 of 107	Attaining	
			Lead (total) µg/L	15 (FBC)	<2 - 20	1 of 93	Attaining	
			Mercury (total) µg/L	0.6 (FC)	<0.2 - 1.7	4 of 100	Attaining	
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	40 - 2260	47 of 105 samples 29 of 50 events	Impaired	
				varies by hardness (A&Ww chronic)	40 - 2260	47 of 105 samples 29 of 50 events	Impaired	
Gila River San Pedro River - Mineral Creek AZ15050100-008 A&Ww, FC, FBC, AgI, AgL	USGS NAWQA Site #09474000 At Kelvin MGGLR136.90 100748	1998 - 6 partial suites 2001 - 2 full suites 2002 - 4 full suites	Turbidity (former standard) NTU	50 (A&Ww)	1 - 72	2 of 6	Inconclusive	
	Summary Row A&Ww Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining	1998 - 2002 12 sampling events	Turbidity (former standard) NTU	50 (A&Ww)	1 - 72	2 of 6	Inconclusive (see comment)	USGS collected 12 samples in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to exceedances of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.
Gila River Salt River - Agua Fria River AZ15070101-015 A&Wedw, FC, PBC, AgI, AgL	ADEQ Ambient Monitoring Above El Mirage Road MGGLR095.61 101264	2001 - 1 full suite 2002 - 3 full suites	No exceedances					

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			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Wedw Attaining** **FC Impaired*** **PBC Attaining** **Agl Attaining** **AgL Attaining**	**2001 - 2002** **4 sampling events**	**No exceedances**					***Assessed as "impaired" due to DDT, toxaphene, and chlordane in fish tissue. EPA placed this reach on the 2002 303(d) List because of this pesticide contamination in fish tissue and a fish consumption advisory. Once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate these parameters are no longer a concern in fish tissue (i.e., the fish consumption advisory is removed).**
Gila River Agua Fria River - Waterman Wash AZ15070101-014 A&Wedw, FC, PBC, Agl, AgL	USGS NAWQA Site #09514100 At Estrella Parkway MGGLR093.66 101495	1998 - 1 partial suite	No exceedances					
	Summary Row **A&Wedw Inconclusive** **FC Impaired*** **PBC Inconclusive** **Agl Inconclusive** **AgL Inconclusive**	**1998** **1 sampling event**	**No exceedances**					***Assessed as "impaired" due to DDT, toxaphene, and chlordane in fish tissue. EPA placed this reach on the 2002 303(d) List because of this pesticide contamination in fish tissue and a fish consumption advisory. Once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate these parameters are no longer a concern in fish tissue (i.e., the fish consumption advisory is removed).**
Gila River Centennial Wash - Gillespie Dam AZ15070101-008 A&Wedw, FC, PBC, Agl, AgL	USGS Station #09518000 Above Gillespie Dam diversion MGGLR075.86 100734	1998 - 6 full suites 1999 - 5 full suites 2000 - 4 full suites 2001 - 4 full suites 2002 - 4 full suites	Boron (total) µg/L	1000 (Agl)	370 - 2700	22 of 23		
			Escherichia coli CFU/100 ml	576 (PBC)	15 - 870	1 of 22		
			Selenium (total) µg/L	2 (A&Wedw chronic)	<1 - 15.5	18 of 23		
			Turbidity (former standard) NTU	50 (A&Wedw)	0.34 - 95	5 of 23		

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			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Wedw Impaired** **FC Impaired*** **PBC Attaining** **AgI Impaired** **AgL Attaining**	**1998 - 2002** **23 sampling events**	**Boron (total)** **µg/L**	**1000** **(AgI)**	**370 - 2700**	**22 of 23**	**Impaired**	**USGS collected 23 samples in 1998-2002. Assessed as "impaired" due to:** **1. Boron exceedances,** **2. Selenium exceedances,** **3. DDTs, toxaphene, and chlordane in fish tissue.** ***EPA placed this reach on the 2002 303(d) List because of this pesticide contamination in fish tissue and a fish consumption advisory. Once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate these parameters are no longer a concern in fish tissue (i.e., the fish consumption advisory is removed).** **This reach is also on the Planning List due to exceedances of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
			Escherichia coli **CFU/100 ml**	**576** **(PBC)**	**15 - 870**	**1 of 22 events (not in the last 3 years of sampling)**	**Attaining**	
			Selenium (total) **µg/L**	**2** **(A&Wedw chronic)**	**<1 - 15.5**	**18 of 23 samples** **18 of 23 events**	**Impaired**	
			Turbidity (former standard) **NTU**	**50** **(A&Wedw)**	**0.34 - 95**	**5 of 23**	**Inconclusive (see comment)**	
Grand Canal HUC boundary 15070101 - New River AZ15070102-250 AgI, AgL	SRP Routine Monitoring At 99th Ave, Phoenix SVLT 2-23-0 MGGRC000.70	1998 - 10 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 11 partial suites 2002 - 11 partial suites	No exceedances					
	Summary Row **AgI Inconclusive** **AgL Inconclusive**	**1998 - 2002** **55 sampling events**	**No exceedances**					**SRP collected 55 samples in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: field pH and total metals (copper, lead, and manganese).**
Hassayampa River headwaters - Copper Creek AZ15070103-007A A&Wc, FC, FBC, AgI, AgL	ADEQ TMDL Program At headwaters MGHSR112.14 101151	2001 - 1 partial suite	pH SU	6.5 - 9.0 (A&Wc, FBC, AgL)	5.5	1 of 1		Lab reporting limits for 1 dissolved cadmium and copper sample were too high to use results for assessment.
	ADEQ TMDL Program Aspen - Below spring MGHSR111.45 101005	2000 - 1 partial suite 2001 - 3 partial suites	Dissolved oxygen mg/L	>7.0 (90%saturation) (A&Wc)	6.5 - 9.7 (65 - 97%)	1 of 3		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			pH SU	6.5 - 9.0 (A&Wc, FBC, AgL)	5.3 - 6.3	3 of 4		Lab reporting limits for 4 dissolved cadmium and copper samples were too high to use results for assessment.
	ADEQ TMDL Program McKinley Millsite - at Babble MGHSR110.65 100942	2000 - 2 partial suites 2001 - 6 partial suites	Cadmium (dissolved) µg/L	varies by hardness (A&Wc chronic)	<4 - 5	1 of 2		Lab reporting limits for 6 other dissolved cadmium samples were too high to use results for assessment.
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	25 - 90	6 of 8		

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			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
				varies by hardness (A&Wc chronic)	25 - 90	8 of 8		
			pH SU	6.5 - 9.0 (A&Wc, FBC, AgL)	5.8 - 7.1	1 of 8		
			Zinc (dissolved) µg/l	varies by hardness (A&Wc acute)	40 - 560	8 of 8		
				varies by hardness (A&Wc chronic)	40 - 560	8 of 8		
	ADEQ TMDL Program Above McCleur tributary MGHSR109.98 101067	2000 - 1 partial suite 2001 - 6 partial suites	Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	<10 - 27	3 of 4		Lab reporting limits for 3 other copper samples were too high to use results for assessment.
				varies by hardness (A&Wc chronic)	<10 - 27	3 of 4		
	ADEQ TMDL Program At McCleur tributary MGHSR109.96 101066	2000 - 1 partial suite 2001 - 6 partial suites	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	20 - 37	7 of 7		Lab reporting limits for 6 other cadmium samples were too high to use results for assessment.
				varies by hardness (A&Wc chronic)	20 - 37	7 of 7		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	1400 - 4077	7 of 7		
				varies by hardness (A&Wc chronic)	1400 - 4077	7 of 7		
			Copper (total) µg/L	500 (AgL)	1530 - 2832	6 of 6		
				1300 (FBC)	1530 - 2832	6 of 6		
			pH SU	6.5 - 9.0 (A&Wc, FBC, AgL)	3.4 - 4.1	6 of 6		
				4.5 - 9.0 (AgI)	3.4 - 4.1	6 of 6		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	1020 - 3070	7 of 7		
				varies by hardness (A&Wc chronic)	1020 - 3070	7 of 7		
	ADEQ TMDL Program Below McCleur tributary MGHSR109.95 101065	2000 - 1 partial suite 2001 - 5 partial suites	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	<5 - 11	2 of 3		Lab reporting limits for 4 dissolved cadmium samples were too high to use results for assessment.
				varies by hardness (A&Wc chronic)	<5 - 11	2 of 2		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	146 - 575	6 of 6		
				varies by hardness (A&Wc chronic)	146 - 575	6 of 6		

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STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
			Copper (total) µg/L	500 (AgL)	334 - 976	1 of 4		
			pH SU	6.5 - 9.0 (A&Wc, FBC, AgL)	5.4 - 6.8	3 of 6		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	390 - 870	6 of 6		
				varies by hardness (A&Wc chronic)	390 - 870	6 of 6		
	ADEQ TMDL Program and Weston Solutions for EPA Above Senator mine MGHSR109.78 101037	2000 - 1 partial suite 2001 - 6 partial suites	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	<4 - 19	3 of 5		Lab reporting limits for some dissolved cadmium samples were too high to use results for assessment. Additional samples taken by Weston Solutions showed exceedances but were not used in this assessment. QA/QC protocols were not fulfilled and resulted in estimated values.
				varies by hardness (A&Wc chronic)	<4 - 19	2 of 3		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	30 - 1300	7 of 7		
				varies by hardness (A&Wc chronic)	30 - 1300	7 of 7		
			Copper (total) µg/L	500 (AgL)	116 - 1620	2 of 5		
			pH SU	6.5 - 9.0 (A&Wc, FBC, AgL)	6.0 - 6.9	2 of 5		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	70 - 1030	7 of 7		
				varies by hardness (A&Wc chronic)	70 - 1030	7 of 7		
	ADEQ TMDL Program and Weston Solutions for EPA At Senator mine MGHSR109.75 101084	2001 - 6 partial suites	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	22.9 - 161	6 of 6		Lab reporting limits for some dissolved cadmium samples were too high to use results for assessment. Additional samples taken by Weston Solutions showed exceedances but were not used in this assessment. QA/QC protocols were not fulfilled and resulted in estimated values.
				varies by hardness (A&Wc chronic)	22.9 - 161	6 of 6		
			Cadmium (total) µg/L	50 (Agl, AgL)	33 - 157	1 of 5		
				84 (FC)	33 - 157	1 of 5		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	<10 - 73.1	1 of 5		
				varies by hardness (A&Wc chronic)	<10 - 73.1	2 of 5		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	2040 - 13,000	6 of 6		
				varies by hardness (A&Wc chronic)	2040 - 13,000	6 of 6		

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			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
			Zinc (total) µg/L	10,000 (Agl)	3350 - 15,300	1 of 5		
	ADEQ TMDL Program and Weston Solutions for EPA Downstream of Senator Mine MGHSR109.68 101036	2000 - 2 partial suites 2001 - 1 partial suite	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	8 - 34	5 of 6		Additional samples taken by Weston Solutions showed exceedances but were not used in this assessment. QA/QC protocols were not fulfilled and resulted in estimated values.
				varies by hardness (A&Wc chronic)	8 - 34	6 of 6		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	12 - 348	4 of 6		
				varies by hardness (A&Wc chronic)	12 - 348	6 of 6		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	720 - 3450	6 of 6		
				varies by hardness (A&Wc chronic)	720 - 3450	6 of 6		
	ADEQ TMDL Program At Whispering Pines MGHSR108.17 100941	2000 - 2 partial suites 2001 - 5 partial suites	Dissolved oxygen mg/L	>7.0 (90% saturation) (A&Wc)	5.1 - 10.8 64 - 105%	1 of 5		Lab reporting limit for dissolved cadmium were too high on 1 sample to use results for assessment. Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	<5 - 7	2 of 7		
				varies by hardness (A&Wc chronic)	<5 - 7	6 of 6		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	<10 - 207	4 of 7		
				varies by hardness (A&Wc chronic)	<10 - 207	5 of 7		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	330 - 680	7 of 7		
				varies by hardness (A&Wc chronic)	330 - 680	7 of 7		
	ADEQ TMDL Program At Jersey MGHSR105.37 101195	2001 - 1 partial suite	No exceedances					Lab reporting limits for dissolved cadmium were too high to use results for assessment.

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	Summary Row **A&Wc Not attaining** **FC Not attaining** **FBC Not attaining** **AgI Not attaining** **AgL Not attaining**	**2000 - 2001** **57 samples** **10 sampling events**	**Cadmium (dissolved) µg/L**	**varies by hardness (A&Wc acute)**	**<4 - 161**	**26 of 39 samples 8 of 10 events (in 2000-2001)**	**Not attaining**	**ADEQ collected 57 samples at 11 sites in 2000 - 2001. TMDLs for cadmium, copper, pH, and zinc were approved by EPA in 2002.** **Assessed as "not attaining" due to cadmium, copper, pH, and zinc exceedances. Although current cadmium data are inconclusive, reach will remain "not attaining" for for all parameters addressed in the TMDL until data indicate designated uses are being attained.** **Placed on the Planning List for TMDL follow up monitoring and missing core parameters: *Escherichia coli*, turbidity/SSC, total boron, and total metals (mercury, manganese, copper, and lead).**
				varies by hardness (A&Wc chronic)	**<4 - 161**	**30 of 32 samples 10 of 10 events**	**Not attaining**	
			Cadmium (total) µg/L	**50 (AgI, AgL)**	**33 - 157**	**1 of 5**	**Inconclusive (Not attaining)**	
				84 (FC)	**33 - 157**	**1 of 5**	**Inconclusive (Not attaining)**	
			Copper (dissolved) µg/L	**varies by hardness (A&Wc acute)**	**<10 - 1300**	**38 of 50 samples 9 of 10 events (in 2000-2001)**	**Not attaining**	
				varies by hardness (A&Wc chronic)	**<10 - 2300**	**41 of 49 samples 9 of 10 events**	**Not attaining**	
			Copper (total) µg/L	**1300 (FBC)**	**116 - 2632**	**6 of 48**	**Attaining**	
				500 (AgL)	**116 - 2632**	**9 of 48**	**Not attaining**	
			pH SU	**6.5 - 9.0 (A&Wc, FBC, AgL)**	**5.3 - 8.36**	**16 of 52**	**Not attaining**	
			Zinc (dissolved) µg/L	**varies by hardness (A&Wc acute)**	**<20 - 13,000**	**46 of 59 samples 10 of 10 events (in 2000-2001)**	**Not attaining**	
				varies by hardness (A&Wc chronic)	**<20 - 13,000**	**46 of 59 samples 10 of 10 events**	**Not attaining**	
Hassayampa River Copper Creek - Blind Indian Creek AZ15070103-007B A&Ww, FC, FBC, AgI, AgL	ADEQ TMDL Program Intermittent Site MGHSR93.19 101193	2001 - 1 partial suite	No exceedances					
	ADEQ TMDL Program At gaging station MGHSR089.37 100940	2000 - 2 field 2001 - 4 partial suites	No exceedances					Lab reporting limits for dissolved cadmium were too high to use results for assessment.
	ADEQ TMDL Program Below French Gulch at confluence with Milk Creek MGHSR83.47 101128	2001 - 4 partial suites	No exceedances					Lab reporting limits for dissolved cadmium were too high to use results for assessment.
	ADEQ Fixed Station Network Near Wagoner, Below Milk Creek MGHSR063.02 100464	1999 - 4 full suites 2000 - 3 full suites 2001 - 4 full suites 2002 - 4 full suites	Arsenic (total) µg/L	50 (FBC)	<10 - 67	1 of 15		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment. All exceedances except *Escherichia coli* and dissolved oxygen occurred following monsoon rains.
			Chronium (total) µg/L	100 (FBC)	<10 - 170	1 of 15		
			Copper (total) µg/L	500 (AgL)	<10 - 1100	1 of 15		

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			Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	2.6 - 10.7 (30 - 128%)	3 of 15		
			Escherichia coli CFU/100 ml	235 (FBC)	<2 - 530	1 of 12		
			Lead (total) µg/L	100 (AgL)	<5 - 150	1 of 15		
				15 (FBC)	<5 - 150	1 of 15		
			Turbidity (former standard) NTU	50 (A&Ww)	0.58 - >1000	1 of 13		
	ADEQ TMDL Program At Blind Indian Creek MGHSR081.07 101003	2000 - 1 field, cadmium, copper, zinc 2001 - 4 field, cadmium, copper, zinc	Cadmium (dissolved) µg/L	varies by hardness (A&Ww chronic)	<1 - 7.0	1 of 5		Lab reporting limits for 4 other dissolved cadmium samples were too high to use results for assessment.
	Summary Row **A&Ww Inconclusive** **FC Attaining** **FBC Inconclusive** **AgI Attaining** **AgL Attaining**	**1999 - 2002** **30 samples** **27 sampling events**	**Arsenic (total)** **µg/L**	**50** **(FBC)**	**<10 - 67**	**1 of 15**	**Attaining**	**ADEQ collected 30 samples at 5 sites in 1999 - 2002. Assessed as "attaining some uses" and placed on the Planning List due to cadmium and *Escherichia coli* exceedances.**
			Cadmium (dissolved) **µg/L**	**varies by hardness** **(A&Ww chronic)**	**<1 - 7.0**	**1 of 16 samples** **1 of 16 events**	**Inconclusive**	
			Chromium (total) **µg/L**	**100** **(FBC)**	**<10 - 170**	**1 of 15**	**Attaining**	
			Copper (total) **µg/L**	**500** **(AgL)**	**<10 - 1100**	**1 of 15**	**Attaining**	
			Escherichia coli **CFU/100 ml**	**235** **(FBC)**	**<2 - 530**	**1 of 12 samples** **1 of 12 events** **(in 2001)**	**Inconclusive**	
			Lead (total) **µg/L**	**100** **(AgL)**	**<5 - 150**	**1 of 15**	**Attaining**	
				15 **(FBC)**	**<5 - 150**	**1 of 15**	**Attaining**	
			Turbidity (former standard) **NTU**	**50** **(A&Ww)**	**0.58 - >1000**	**1 of 13**	**Attaining**	
Hassayampa River Cottonwood Creek - Martinez Wash AZ15070103-004 A&Ww, FC, FBC, AgI, AgL	ADEQ and USGS Ambient Monitoring At Box Canyon Dam MGHSR049.69 100463	1999 - 4 full suites 2000 - 4 full suites 2001 - 4 full suites 2002 - 4 full suites	Arsenic (total) µg/L	50 (FBC)	<10 - 53	1 of 15		
			Chromium (total) µg/L	100 (FBC)	<10 - 200	1 of 15		
			Copper (total) µg/L	500 (AgL)	<10 - 810	1 of 15		
			Escherichia coli CFU/100 ml	235 (FBC)	2 - 11,400	1 of 14		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
			Lead (total) µg/L	100 (AgL)	<5 - 100	1 of 15		
				15 (FBC)	<5 - 100	1 of 15		
			Turbidity (former standard) NTU	50 (A&Ww)	0.8 - >1000	2 of 15		
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **AgI Attaining** **AgL Attaining**	**1999 - 2002** **16 sampling events**	**Arsenic (total)** **µg/L**	**50** **(FBC)**	**<10 - 53**	**1 of 15**	**Attaining**	**ADEQ and USGS collected 16 samples in 1999-2002. Assessed as "attaining all uses."**
			Chromium (total) **µg/L**	**100** **(FBC)**	**<10 - 200**	**1 of 15**	**Attaining**	
			Copper (total) **µg/L**	**500** **(AgL)**	**<10 - 610**	**1 of 15**	**Attaining**	
			Escherichia coli **CFU/100 ml**	**235** **(FBC)**	**2 - 11,400**	**1 of 14** **(Not in the last 3 years of sampling)**	**Attaining**	
			Lead (total) **µg/L**	**100** **(AgL)**	**<5 - 100**	**1 of 15**	**Attaining**	
				15 **(FBC)**	**<5 - 100**	**1 of 15**	**Attaining**	
			Turbidity (former standard) **NTU**	**50** **(A&Ww)**	**0.8 - >1000**	**2 of 15**	**Attaining**	
Hassayampa River Sols Wash - 8 miles below Wickenburg AZ15070103-002A A&Ww, FC, FBC, AgL, AgI	ADEQ Ambient Monitoring At Nature Conservancy near Wickenburg MGHSR042.28 100462	2001 - 1 full suite 2002 - 2 full suites	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	2.94 - 3.38	3 of 3		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			Escherichia coli CFU/100 mL	235 (FBC)	4 - 590	1 of 3		
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Inconclusive** **AgI Attaining** **AgL Attaining**	**2001 - 2002** **3 sampling events**	***Escherichia coli*** **CFU/100 mL**	**235** **(FBC)**	**4 - 590**	**1 of 3 events** **(in 2002)**	**Inconclusive**	**ADEQ collected 3 samples in 2001-2002. Assessed as "attaining some uses" and placed on the Planning List due to *Escherichia coli* exceedance.**
Hassayampa River Buckeye Canal - Gila River AZ15070103-001B A&Ww, FC, FBC, AgL	USGS NAWQA Site #09517000 Near Arlington MGHSR001.56	1998 - 4 partial suites	DDE µg/L	0.001 (FC, AgL)	0.003 - 0.010	2 of 4		2 other samples exceeded the DDE standard, but the values were estimated and could not be used for assessment.
	ADEQ Ambient Monitoring Above Gila River MGHSR000.23 101197	2001 - 1 full suite 2002 - 3 full suites	Turbidity (former standard) NTU	50 (A&Ww)	18.1 - 110	1 of 4		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Ww Inconclusive** **FC Impaired*** **FBC Attaining** **AgL Inconclusive**	**1998 - 2002** **8 sampling events**	**DDE (a DDT metabolite) µg/L**	**0.001 (FC, AgL)**	**0.003 - 0.010**	**2 of 4**	**Inconclusive (impaired)**	**ADEQ and USGS collected 8 samples in 1998 - 2002.** ***Assessed as "impaired" due to DDT, toxaphene, and chlordane in fish tissue. EPA placed this reach on the 2002 303(d) List because of pesticide contamination in fish tissue and a fish consumption advisory. Once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate these parameters are no longer a concern in fish tissue (i.e., the fish consumption advisory is removed).** **Also on the Planning List due to exceedance of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
			Turbidity (former standard) NTU	**50 (A&Ww)**	**18.1 - 110**	**1 of 4**	**Inconclusive (see comment)**	
Hassayampa River, unnamed tributary of headwaters - Hassayampa River AZ15070103-417 A&Wc, FC, FBC (tributary rule)	Weston Solutions for EPA Background sample MGUHS000.12	2001 - 1 dissolved metals suite	Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	27.7	1 of 1		Additional samples taken by Weston Solutions showed exceedances but were not used in this assessment. QA/QC protocols were not fulfilled and resulted in estimated values.
				varies by hardness (A&Wc chronic)	27.7	1 of 1		
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive**	**2001** **1 sampling event**	**Copper (dissolved) µg/L**	**varies by hardness (A&Wc acute)**	**27.7**	**1 of 1 event (in 2001)**	**Inconclusive**	**Insufficient monitoring data to assess.** **Placed on the Planning List due to copper exceedance.**
				varies by hardness (A&Wc chronic)	**27.7**	**1 of 1 event**	**Inconclusive**	
Indian Bend Wash headwaters - Salt River AZ15060106B-179 A&We, PBC	USGS At 40th Street MGIBW001.43 101520	2001 - 1 field, metals 2002 - 2 field, metals	Lead (total) µg/L	15 (PBC)	10 - 38	1 of 3		
	USGS At Curry Road MGIBW000.23 101492	1998 - 3 partial suites	No exceedances					
	Summary Row **A&We Inconclusive** **PBC Inconclusive**	**1998 - 2002** **6 sampling events**	**Lead (total) µg/L**	**15 (PBC)**	**10 - 38**	**1 of 3**	**Inconclusive**	**USGS collected 6 samples at 2 sites in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to lead exceedance and missing core parameters: dissolved metals (cadmium, copper, zinc).**

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
Little Ash Creek headwaters - Ash Creek AZ15070102-039 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Near Estler Peak MGLAS003.16 100578	1998 - 1 partial suite 2002 - 1 full suite	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998 - 2002** **2 sampling events**	**No exceedances**					**Insufficient monitoring data to assess.**
Lynx Creek, unnamed tributary of headwaters - Lynx Creek AZ15070102-124 A&Wc, FC, FBC (tributary rule)	Weston Solutions for EPA Above Blue John Creek MGULN000.13	2001 - 1 dissolved metals suite	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	42.2	1 of 1		Additional samples taken by Weston Solutions showed exceedances but were not used in this assessment. QA/QC protocols were not fulfilled and resulted in estimated values.
				varies by hardness (A&Wc chronic)	42.2	1 of 1		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	1090	1 of 1		
				varies by hardness (A&Wc chronic)	1090	1 of 1		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	3010	1 of 1		
				varies by hardness (A&Wc chronic)	3010	1 of 1		
	Weston Solutions for EPA At Blue John Creek MGULN000.11	2001 - 1 dissolved metals suite	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	40.7	1 of 1		
				varies by hardness (A&Wc chronic)	40.7	1 of 1		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	826	1 of 1		
				varies by hardness (A&Wc chronic)	826	1 of 1		
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	2820	1 of 1		
				varies by hardness (A&Wc chronic)	2820	1 of 1		
	Weston Solutions for EPA Below Blue John Creek MGULN000.07	2001 - 1 dissolved metals suite	Cadmium (dissolved) µg/L	varies by hardness (A&Wc acute)	39	1 of 1		
				varies by hardness (A&Wc chronic)	39	1 of 1		
			Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	585	1 of 1		
				varies by hardness (A&Wc chronic)	585	1 of 1		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
			Zinc (dissolved) µg/L	varies by hardness (A&Wc acute)	2630	1 of 1		
				varies by hardness (A&Wc chronic)	2630	1 of 1		
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive**	**2001** **3 samples** **1 sampling event**	**Cadmium (dissolved)** **µg/L**	**varies by hardness (A&Wc acute)**	**39 - 42.2**	**3 of 3 samples 1 of 1 event (in 2001)**	**Inconclusive**	**Insufficient monitoring data to assess.** **Placed on the Planning List due to cadmium, copper, and zinc exceedances.**
				varies by hardness (A&Wc chronic)	**39 - 42.2**	**3 of 3 samples 1 of 1 event**	**Inconclusive**	
			Copper (dissolved) **µg/L**	**varies by hardness (A&Wc acute)**	**585 - 1090**	**3 of 3 samples 1 of 1 event (in 2001)**	**Inconclusive**	
				varies by hardness (A&Wc chronic)	**585 - 1090**	**3 of 3 samples 1 of 1 event**	**Inconclusive**	
			Zinc (dissolved) **µg/L**	**varies by hardness (A&Wc acute)**	**2630 - 3010**	**3 of 3 samples 1 of 1 event (in 2001)**	**Inconclusive**	
				varies by hardness (A&Wc chronic)	**2630 - 3010**	**3 of 3 samples 1 of 1 event**	**Inconclusive**	
Martinez Canyon headwaters - Box Canyon AZ15050100-060 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring MGMZC004.21 101349	2002 - 1 full suite	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	3.07	1 of 1		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**2002** **1 sampling event**	**No exceedances**					**Assessed as "Inconclusive" and placed on the Planning List due to insufficient monitoring events.**
Mineral Creek Devils Canyon - Gila River AZ15050100-012B A&Ww, FC, FBC, AgL	ASARCO Consent Decree Monitoring At Indian Gardens (Above mine) (Site IG) MGMIN007.55	1998 - 12 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 6 partial suites	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<20 - 24	1 of 41		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
				varies by hardness (A&Ww chronic)	<20 - 24	2 of 41		
			Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	3.5 - 15.2	10 of 41		
			Lead (total) µg/L	15 (FBC)	<2 - 54	1 of 41		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<2 - 3.5	1 of 41		
			Turbidity (former standard) NTU	50 (A&Ww)	0.5 - 960	7 of 41		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	ASARCO Consent Decree Monitoring Mineral Creek Diversion Tunnel Inlet (Site MCTI) MGMIN005.77	2001 - 12 partial suites 2002 - 8 partial suites	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	2.8 - 7.3	15 of 22		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment. Sampling ended at this site in September, 2002. Water was diverted from the area after new tunnel extension. Additional samples taken 1998 - 2000. See comment in summary row.
			Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 21	1 of 20		
				varies by hardness (A&Ww chronic)	<10 - 21	1 of 20		
	ASARCO Consent Decree Monitoring Mineral Creek Diversion Tunnel Outlet (Site MCTO) MGMIN004.74	2001 - 11 partial suites 2002 - 11 partial suites	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 25	1 of 22		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment. Additional samples taken 1998 - 2000. See comment in summary row.
				varies by hardness (A&Ww chronic)	<10 - 25	2 of 22		
			Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	4.4 - 9.4	2 of 21		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<2.0 - 8.7	17 of 22		
	ASARCO Consent Decree Monitoring Channel Outlet (Site Surf 8w) MGMIN002.21	2001 - 8 partial suites 2002 - 11 partial suites	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 27	1 of 19		Additional samples taken 1998 - 2000. See comment in summary row.
				varies by hardness (A&Ww chronic)	<10 - 27	1 of 19		
			Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	4.37 - 11.28	2 of 18		
			Selenium µg/L	2.0 (A&Ww chronic)	<2.0 - 8.4	16 of 19		
	ASARCO Consent Decree Monitoring Below highway bridge 177 (Site Min-1) MGMIN001.35	2002 - 1 partial suite	Copper µg/L	varies by hardness (A&Ww acute)	<10 - 32	1 of 19		
				varies by hardness (A&Ww chronic)	<10 - 32	1 of 19		
			Selenium µg/L	2.0 (A&Ww chronic)	<2.0 - 3.1	1 of 7		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row A&Ww Impaired FC Inconclusive FBC Inconclusive AgL Attaining	1998 - 2002 103 samples 41 sampling events	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<20 - 24	1 of 41 events (in 2001)	Inconclusive (Impaired)	ASARCO collected 103 samples in 2001 - 2002. Assessed as "impaired" due to copper and selenium exceedances. ASARCO began diverting water in 2001. Prior to diversion, exceedances occurred for cadmium, copper, lead, nickel, pH, turbidity, and zinc, in addition to selenium. Water quality significantly improved beginning in January 2001, except for copper, selenium and turbidity. Therefore, exceedances before the water diversion were not included in the assessment statistics. On the Planning List due to: 1. Former turbidity standard exceedances. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. 2. Missing core parameters: *Escherichia coli* and total mercury.
				varies by hardness (A&Ww chronic)	<20 - 24	2 of 41 events	Impaired	
			Lead (total) µg/L	15 (FBC)	<2 - 54	1 of 103	Attaining	
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<2 - 3.5	19 of 41 events	Impaired	
			Turbidity (former standard) NTU	50 (A&Ww)	0.5 - 980	7 of 103 7 of 41 above treatment	Inconclusive (see comment)	
New River headwaters - Interstate 17 AZ15070102-006A A&Ww, FC, FBC, AgI, AgL	ADEQ Biocriteria Program Above Burnt Hole Canyon MGNWR040.70 100604	1998 - 1 partial suite	No exceedances					
	Summary Row A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive	1998 1 sampling event	No exceedances					Insufficient monitoring data to assess.
Queen Creek headwaters - Superior Mine WWTP AZ15050100-014A A&We, PBC, AgL	BHP Copper Consent Decree Monitoring Above mine discharge AMP1	1998 - 3 field, metals 2000 - 1 field, metals 2001 - 4 field, metals	Copper (dissolved) µg/L	varies by hardness (A&We)	<20 - 30	1 of 8		
	Summary Row A&We Impaired PBC Attaining AgL Inconclusive	1998 - 2001 8 sampling events	Copper (dissolved) µg/L	varies by hardness (A&We)	<20 - 30	1 of 8 events (in 2000)	Inconclusive (Impaired)	BHP collected 8 samples in 1998-2001. Assessed as "impaired" in 2002 due to copper exceedances. Reach was on 2002 303(d) List for copper. Although current copper data are inconclusive, the reach will remain "impaired" until a TMDL is complete or copper data indicate designated uses are being attained. ADEQ investigation indicates that the reach may be intermittent rather than ephemeral, and therefore, more stringent water quality standards should be adopted for this reach. Also placed on the Planning List due to missing core parameters: dissolved cadmium and total lead.

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			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
Queen Creek Superior Mine WWTP - Potts Canyon AZ15050100-014B A&Wedw, PBC	BHP Copper Consent Decree Monitoring Below mine discharge AMP2	1998 - 3 partial suites 2000 - 1 partial suites 2001 - 4 partial suites	Copper (dissolved) µg/L	varies by hardness (A&Wedw acute)	<20 - 30	1 of 8		
				varies by hardness (A&Wedw chronic)	<20 - 30	1 of 8		
	ADEQ Ambient Monitoring Above Boyce-Thompson Arboretum MGQEN028.97 100624	2002 - 1 full suite	Copper (dissolved) µg/L	varies by hardness (A&Wedw acute)	50	1 of 1		
				varies by hardness (A&Wedw chronic)	50	1 of 1		
			Selenium (total) µg/L	2.0 (A&Wedw chronic)	5.8	1 of 1		
	Summary Row **A&Wedw Impaired** **PBC Inconclusive**	**1998 - 2002** **9 sampling events**	**Copper (dissolved) µg/L**	**varies by hardness (A&Wedw acute)**	**<20 - 50**	**2 of 9 samples 2 of 9 events (in 2000 and 2002)**	**Impaired**	**BHP and ADEQ collected 9 samples in 1998-2002. Assessed as "Impaired" due to copper exceedances.** **Placed on the Planning List due to selenium exceedance and missing core parameters: dissolved cadmium, *Escherichia coli*, and total lead.**
				varies by hardness (A&Wedw chronic)	**<20 - 50**	**2 of 9 samples 2 of 9 events**	**Impaired**	
			Selenium (total) µg/L	**varies by hardness (A&Wedw chronic)**	**5.8**	**1 of 1 sample 1 of 1 event**	**Inconclusive**	
Salt River 2 km below Granite Reef dam - Interstate 10 bridge AZ15060106B-001B A&We, PBC	USGS At Priest Drive near Phoenix MGSLR013.74 101493	1998 - 1 partial suite	No exceedances					
	Summary Row **A&We Inconclusive** **PBC Inconclusive**	**1998** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**
Salt River 23rd Ave WWTP - Gila River AZ15060106B-001D A&Wedw, FC, PBC, AgI, AgL	USGS NAWQA Site #09512407 Below Tres Rios discharge MGSLR001.88 101265	2001 - 1 full suite 2002 - 3 full suites	No exceedances					
	Summary Row **A&Wedw Attaining** **FC Impaired*** **PBC Attaining** **AgI Attaining** **AgL Attaining**	**2001 - 2002** **4 sampling events**	**No exceedances**					**USGS collected 4 samples in 2001-2002.** ***Assessed as "Impaired" due to DDT, toxaphene, and chlordane in fish tissue. EPA placed this reach on the 2002 303(d) List because of this pesticide contamination in fish tissue and a fish consumption advisory. Once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate these parameters are no longer a concern in fish tissue (i.e., fish consumption advisory is removed).**

TABLE 13. MIDDLE GILA WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
South Canal Granite Reef Dam - Consolidated Canal AZ15060106B-180 DWS, AgI, AgL	SRP Routine Monitoring At division gates MGSOC006.83 SVCA 3-3.3	1998 - 10 partial suites 1999 - 11 partial suites 2000 - 11 partial suites 2001 - 12 partial suites 2002 - 11 partial suites	No exceedances					
	SRP Routine Monitoring At Val Vista Water Treatment Plant SVCA 3-1.4	1998 - 11 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 12 partial suites 2002 - 12 partial suites	No exceedances					
	SRP Routine Monitoring At Granite Reef Dam MGSOC000.05 SVCA 3-0.0	1998 - 11 partial suites 1999 - 12 partial suites 2000 - 11 partial suites 2001 - 12 partial suites 2002 - 12 partial suites	No exceedances					
	Summary Row DWS Inconclusive AgI Inconclusive AgL Inconclusive	1998 - 2002 171 samples 58 sampling events	No exceedances					SRP collected 171 samples at 3 sites in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).
Sycamore Creek Tank Canyon-Agua Fria River AZ15070102-024B A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Near Dugas Above ranger station MGSYD004.90 100704	1998 - 1 partial suite 2001 - 1 partial suite 2002 - 4 full suites	No exceedances					
	Summary Row A&Ww Attaining FC Attaining FBC Attaining AgL Attaining	1998 - 2002 6 sampling events	No exceedances					ADEQ collected 6 samples in 1998-2002. Assessed as "attaining all uses."
Tempe Canal HUC boundary 15050100 - Western Canal AZ15050100-115 DWS, AgI, AgL	SRP Routine Monitoring At South Tempe Water Treatment Plant MGTPC004.16 SVCA 6-9.1	1998 - 10 partial suites 1999 - 8 partial suites 2000 - 11 partial suites 2001 - 11 partial suites 2002 - 10 partial suites	No exceedances					
	Summary Row DWS Inconclusive AgI Inconclusive AgL Inconclusive	1998 - 2002 50 samples	No exceedances					SRP collected 50 samples in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).
Turkey Creek headwaters - unnamed tributary at 34 19'28"/112 21'28" AZ15070102-036A A&Wc, FC, FBC, AgI, AgI	ADEQ TMDL Program At Forest Road 261 MGTRK014.6	2000 - 1 metals suite	No exceedances					
	ADEQ TMDL Program At Forest Road 706 MGTRK013.3	2000 - 1 metals suite	No exceedances					
	ADEQ TMDL Program At Goodwin MGTRK010.36	2000 - 1 metals suite 2001 - 3 metals suites	No exceedances					

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			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**2000 - 2001** **6 samples** **4 sampling events**	**No exceedances**					**ADEQ collected 6 samples at 3 sites in 2000-2001. Assessed as "Inconclusive" and placed on the Planning List due to missing core parameters: turbidity/SSC, total boron, dissolved oxygen, *Escherichia coli*, and total metals (manganese and mercury).**
Turkey Creek unnamed tributary at 34 19'28"/112 21'26" - Poland Creek AZ15070102-036B A&Ww, FC, FBC, AgI, AgL	ADEQ TMDL Program At corral MGTRK006.54	2000 - 2 partial suites 2001 - 2 partial suites	No exceedances					Lab reporting limits for dissolved cadmium and copper sample were too high to use results for assessment.
	ADEQ TMDL Program At Forest Road 93 MGTRK003.8	2000 - 2 partial suites 2002 - 1 partial suite	Lead (total) µg/L	15 (FBC)	<5 - 76	1 of 1		Lab reporting limit for 1 of 3 dissolved cadmium samples was too high to use results for assessment.
	ADEQ TMDL Program At bridge just above tailings MGTRK002.45	2000 - 4 metals (total) 2001 - 3 metals suites 2002 - 1 partial suites	Lead (total) µg/L	15 (FBC)	<5 - 86	1 of 5		Lab reporting limits for dissolved cadmium for 4 of 5 samples were too high to use results for assessment.
	ADEQ TMDL Program At tributary near mines MGTRK002.25	2002 - 1 partial suites	Lead (total) µg/L	15 (FBC)	54 - 88	1 of 1		
	ADEQ TMDL Program At tailings runoff (in stream)	2001 - 2 partial suites	Arsenic (dissolved) µg/L	360 (A&Ww acute)	62 - 18,200	1 of 2		
				190 (A&Ww chronic)	62 - 18,200	1 of 2		
			Arsenic (total) µg/L	50 (FBC)	43 - 35,900	2 of 2		
				200 (AgL)		2 of 2		
				1450 (FC)		1 of 2		
				2000 (AgI)		1 of 2		
			Cadmium (dissolved) µg/L	varies by hardness (A&Ww acute)	53 - 626	2 of 2		
				varies by hardness (A&Ww chronic)	53 - 626	2 of 2		
			Cadmium (total) µg/L	50 (AgI)	11 - 883	2 of 2		
				50 (AgL)		2 of 2		
				84 (FC)		2 of 2		
			Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	858 - 13,600	2 of 2		
				varies by hardness (A&Ww chronic)	858 - 13,600	2 of 2		
			Copper (total) µg/L	500 (AgL)	43 - 13,180	2 of 2		
				1300 (FBC)		2 of 2		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
				5000 (AgI)		1 of 2		
			Lead (dissolved) µg/L	varies by hardness (A&Ww chronic)	<5 - 61	2 of 2		
			Lead (total) µg/L	15 (FBC)	5 - 1070	2 of 2		
				100 (AgL)		1 of 2		
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	7620 - 158,000	2 of 2		
				varies by hardness (A&Ww chronic)		2 of 2		
			Zinc (total) µg/L	10,000 (AgI)	1540 - 174,000	2 of 2		
				25,000 (AgL)		1 of 2		
				69,000 (FC)		1 of 2		
	ADEQ TMDL Program Downstream of mines MGTRK002.06	2000 - 1 partial suites 2001 - 2 partial suites 2002 - 1 partial suite	Arsenic (total) µg/L	50 (FBC)	<10 - 106	1 of 3		Some dissolved cadmium and dissolved copper samples could not be assessed due to lack of water hardness results.
			Lead (total) µg/L	15 (FBC)	<5 - 150	1 of 4		
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	<20 - 430	1 of 4		
				varies by hardness (A&Ww chronic)	<20 - 430	1 of 4		
	ADEQ TMDL Program Bottom site MGTRK002.02	2002 - 1 partial suite	Lead (total) µg/L	15 (FBC)	49 - 110	1 of 1		
	ADEQ TMDL Program Old biocriteria site MGTRK000.91	2001- 1 partial suite	No exceedances					
	Summary Row **A&Ww Impaired** **FC Attaining** **FBC Inconclusive** **AgI Inconclusive** **AgL Attaining**	**2000 - 2002** **24 samples** **7 sampling events**	**Arsenic (dissolved) µg/L**	**360 (A&Ww acute)**	**<5 - 19,200**	**1 of 16 samples 1 of 6 events (in 2001)**	**Inconclusive**	**ADEQ collected 24 samples at 8 sites in 2000 - 2002. Assessed as "impaired" due to cadmium, copper, lead, and zinc exceedances.** **Placed on the Planning List due to arsenic exceedances and missing core parameters: *Escherichia coli*, total boron, total manganese, and turbidity/SSC.**
				190 (A&Ww chronic)		**1 of 16 samples 1 of 6 events**	**Inconclusive**	
			Arsenic (total) µg/L	**50 (FBC)**	**<5 - 37,900**	**3 of 16**	**Attaining**	
				200 (AgL)		**2 of 16**	**Attaining**	
				1450 (FC)		**1 of 16**	**Attaining**	

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
				2000 (Agl)		1 of 16	Attaining	
			Cadmium (dissolved) µg/L	varies by hardness (A&Ww acute)	<1.0 - 931	2 of 9 samples 2 of 4 events (in 2001)	Impaired	
				varies by hardness (A&Ww chronic)	<1.0 - 931	2 of 9 samples 2 of 4 events	Impaired	
			Cadmium (total) µg/L	34 (FC)	<1.0 - 883	2 of 19	Attaining	
				50 (Agl, AgL)		2 of 19	Attaining	
			Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 13,600	2 of 13 samples 2 of 7 events (in 2001)	Impaired	
				varies by hardness (A&Ww chronic)		2 of 13 samples 2 of 7 events	Impaired	
			Copper (total) µg/L	500 (AgL)	<10 - 13,180	2 of 19	Attaining	
				1300 (FBC)		2 of 19	Attaining	
				5000 (Agl)		1 of 19	Attaining	
			Lead (dissolved)	varies by hardness (A&Ww chronic)	<5 - 81	2 of 18 samples 2 of 7 events	Impaired	
			Lead (total) µg/L	15 (FBC)	<5 - 1070	7 of 18 samples	Inconclusive	
				100 (AgL)		1 of 18 samples	Attaining	
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	<50 - 158,000	3 of 18 samples 3 of 7 events (in 2001)	Impaired	
				varies by hardness (A&Ww chronic)		3 of 18 samples 3 of 7 events	Impaired	
			Zinc (total)	10,000 (Agl)	<20 - 174,000	2 of 19	Attaining	
				25,000 (AgL)		2 of 19		
				65,000 (FC)		2 of 19		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
Western Canal Tempe Canal - HUC boundary 15050100 AZ15060106B-262 AgI, AgL	SRP Routine Monitoring At Lateral 12.8 Near 19th Ava, Phoenix MGWSC012.39 SVCA 7-12.8	1998 - 11 partial suites 1999 - 11 partial suites 2000 - 11 partial suites 2001 - 11 partial suites 2002 - 12 partial suites	No exceedances					
	Summary Row AgI Inconclusive AgL Inconclusive	**1998 - 2002** **56 sampling events**	**No exceedances**					**SRP collected 56 samples in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: total metals (manganese, copper, and lead).**
Western Canal HUC boundary 15050100 - terminus AZ15050100-990 DWS, AgI, AgL	SRP Routine Monitoring At Kyrene Intake MGWSC006.00 SVCA 7-22E	1998 - 11 partial suites 1999 - 11 partial suites 2000 - 11 partial suites 2001 - 10 partial suites 2002 - 12 partial suites	Lead (dissolved) µg/L	15 (DWS)	<2 - 16	1 of 55		
			Selenium (dissolved) µg/L	20 (AgL)	<2 - 24	1 of 55		Dissolved selenium data was compared to total selenium standard.
	Summary Row DWS Inconclusive AgI Inconclusive AgL Inconclusive	**1998 - 2000** **55 sampling events**	**Lead (dissolved) µg/L**	**15 (DWS)**	**<2 - 16**	**1 of 55**	**Attaining**	**SRP collected 55 samples in 1998 - 2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).**
			Selenium (dissolved) µg/L	**20 (AgL)**	**<2 - 24**	**1 of 55**	**Attaining**	
LAKES MONITORING DATA								
Alvord Park Lake AZL15060106B-0050 A&Ww, FC, PBC	AGFD Urban Lakes Study and Routine Monitoring MGALV-A 101040	1998 - 11 field 1999 - 1 partial suite 2000 - 2 partial suites 2002 - 1 partial suite	Ammonia mg/L	varies by temperature and pH (A&Ww chronic)	0.50 -1.09	2 of 4		
	AGFD Urban Lakes Study and Routine Monitoring MGALV-B 101041	1998 - 11 field 1999 - 1 partial suite 2000 - 2 partial suites	Ammonia mg/L	varies by temperature and pH (A&Ww chronic)	0.50 - 1.18	2 of 4		
	AGFD Urban Lakes Study and Routine Monitoring MG-ALV-C 101042	1998 - 11 field 2000 - 2 partial suites	No exceedances					
	AGFD Urban Lakes Study and Routine Monitoring MG-ALV-ABC (composite from sites A, B, C) 101053	1998 - 4 partial suites	No exceedances					
	AGFD Routine Monitoring MG-ALV-I	1999 - 2 partial suites 2000 - 1 partial suite	Ammonia mg/L	varies by temperature and pH (A&Ww chronic)	<0.04 - 0.386	1 of 3		
	AGFD Routine Monitoring MG-ALV-ML	1999 - 1 partial suite 2001 - 1 partial suite	Ammonia mg/l	varies by temperature and pH (A&Ww chronic)	0.33	1 of 1		
	ADEQ Clean Lakes Program MGALV (Sites A, BR, SH)	2002 - 3 *Escherichia coli*	*Escherichia coli* CFU/100 ml	578 (PBC)	41 - >2419	1 of 3		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Ww Impaired** **FC Inconclusive** **PBC Inconclusive**	**1998 - 2002** **51 samples** **18 sampling events**	**Ammonia mg/L**	**varies by temperature and pH (A&Ww chronic)**	**<0.04 - 1.18**	**6 of 12 samples 4 of 6 events**	**Impaired**	**AGFD collected 51 samples at 5 sites in 1998-2002. Assessed as "impaired" due to ammonia exceedances.**
			***Escherichia coli* CFU/100 ml**	**576 (PBC)**	**41 - >2419**	**1 of 3 events (in 2002)**	**Inconclusive (see comment)**	**Placed on the Planning List due to *E. coli* exceedance and missing core parameters: total mercury and turbidity.**
Chaparral Lake AZL15060106B-0300 A&Ww, FC, PBC, Agl	AGFD Urban Lakes Study and Routine Monitoring MGCHA-A 101045	1998 - 11 partial suites 2002 - 1 partial suite	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	4.8 - 14.0 (62 - 184%)	3 of 12		
			pH (high) SU	6.5 - 9.0 (A&Ww, PBC, Agl)	7.9 - 9.4	2 of 12		
	AGFD Urban Lakes Study MGCHA-B 101046	1998 - 11 field	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	5.2 - 13.8 (70 - 185%)	3 of 11		
			pH (high) SU	6.5 - 9.0 (A&Ww, PBC, Agl)	8.0 - 9.4	2 of 11		
	AGFD Urban Lakes Study MGCHA-AB 101056 (composite of sites A and B)	1998 - 4 partial suites	No exceedances					
	AGFD Routine Monitoring MGCHA-ML	2001 - 1 partial suite	No exceedances					
	ADEQ Lakes Program MGCHA (Sites BR, SH, A)	2002 - 5 *Escherichia coli*	*Escherichia coli* CFU/100 ml	576 (PBC)	15 - 2419	5 of 5		
	Summary Row **A&Ww Impaired** **FC Attaining** **PBC Impaired** **Agl Inconclusive**	**1998 - 2002** **28 samples** **13 sampling events**	**Dissolved oxygen mg/L**	**>6.0 (90% saturation) (A&Ww)**	**4.6 - 14.0 (62 - 185%)**	**6 of 24**	**Impaired**	**AGFD collected 28 samples at 3 sites in 1998 - 2002. Assessed as "impaired" due to low dissolved oxygen and *Escherichia coli* exceedances.**
			***Escherichia coli* CFU/100 ml**	**576 (PBC)**	**15 - 2419**	**2 of 3 events (in 2002)**	**Impaired**	**Placed on the Planning List due to missing core parameters: total boron and turbidity.**
			pH (high) SU	**6.5 - 9.0 (A&Ww, PBC, Agl)**	**7.9 - 9.4**	**4 of 24**	**Attaining**	
Cortez Park Lake AZL15060106B-0410 A&Ww, FC, PBC, Agl	AGFD Urban Lakes Study and Routine Monitoring MGCOR-A 101043	1998 - 11 field	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	4.0 - 12.8 (53 - 185%)	1 of 11		
			pH (high) SU	6.5 - 9.0 (A&Ww, PBC, Agl)	8.2 - 10.0	6 of 11		
	AGFD Urban Lakes Study and Routine Monitoring MGCOR-B 101044	1998 - 11 field	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	3.9 - 11.3 (51 - 153%)	1 of 11		
			pH (high) SU	6.5 - 9.0 (A&Ww, PBC, Agl)	8.2 - 9.8	2 of 11		
	AGFD Urban Lakes Study MGCOR-AB (composite of sites A and B) 101055	1998 - 4 partial suites	No exceedances					
	AGFD Routine Monitoring MGCOR-Bridge	1999 - 1 partial suite	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	3.1 (43%)	1 of 1		
	AGFD Routine Monitoring MGCOR-Main Lagoon	1999 - 1 partial suite	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	2.6 (37%)	1 of 1		

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	AGFD Routine Monitoring MGCOR-Small Lagoon	1999 - 1 partial suite	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	4.0 (57%)	1 of 1		
	Summary Row A&Ww Impaired FC Inconclusive PBC Impaired Agl Impaired	**1998 - 1999** **29 samples** **12 sampling events**	**Dissolved oxygen** **mg/L**	**> 6.0** **(90% saturation)** **(A&Ww)**	**2.6 - 12.8** **(37 - 173%)**	**5 of 25**	**Impaired**	**AGFD collected 12 samples at 5 sites in 1998-1999. Assessed as "impaired" due to low dissolved oxygen and high pH.** **Placed on the Planning List due to:** **1. Fish kill in 1999 related to an algal bloom.** **2. Missing core parameters: *Escherichia coli*, total boron, and total mercury.**
			pH (high) **SU**	**6.5 - 9.0** **(A&Ww, PBC, Agl)**	**7.7 - 10.0**	**8 of 25**	**Impaired**	
Fain Lake AZL15070102-0005 A&Ww, FC, FBC	ADEQ Lakes Program MGFAI-A 101400	2002 - 1 partial suite	Turbidity (former standard) NTU	25 (A&Ww)	25 - 33	1 of 1		
	Summary Row A&Ww Inconclusive FC Inconclusive FBC Inconclusive	**2002** **1 sampling event**	**Turbidity (former standard)** **NTU**	**25** **(A&Ww)**	**25 - 33**	**1 of 1**	**Inconclusive (see comment)**	**Insufficient monitoring data to assess.** **Placed on the Planning List due to exceedance of the former turbidity standard. Further investigation into the causes and sources of turbidity will be scheduled during the next monitoring cycle for this watershed.**
Lake Pleasant AZL15070102-1100 A&Ww, FC, FBC, DWS, Agl, AgL	ADEQ Lakes Program MGPLE-A 100067	2000 - 2 partial suites 2001 - 3 full suites 2002 - 3 partial suites	Ammonia mg/L	varies by temperature and pH (A&Ww chronic)	0.03 - 0.42	1 of 5		
			Selenium(total) µg/L	2.0 (A&Ww chronic)	<2 - 3	1 of 7		
	ADEQ Lakes Program MGPLE-B 100068	2000 - 2 partial suites 2001 - 3 full suites 2002 - 3 partial suites	pH SU	6.5 - 9.0 (A&Ww, FBC, DWS, Agl, AgL)	7.7 - 10.6	1 of 8		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<2.0 - 3.0	1 of 6		
	ADEQ Lakes Program MGPLE-MAR 101000	2000 - 1 field + 3 VOCs 2001 - 2 field + 3 VOCs	No exceedances					
	Univ. of Arizona Reservoir Project for ADEQ MGPLE-C	2002 - 2 partial suites	No exceedances					
	AGFD Routine Monitoring MGPLE 5 sites (Agua Fria arm, Castle Creek arm, dam site, mid-lake, boat ramp)	1998 - 1 partial suite 2000 - 2 partial suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	4.6 - 8.9 (53 - 109%)	1 of 12 (at Agua Fria Arm site)		
	Summary Row A&Ww Inconclusive FC Attaining FBC Inconclusive DWS Attaining Agl Attaining AgL Attaining	**1998 - 2002** **30 samples** **9 sampling events**	**Ammonia** **mg/L**	**varies by pH and temperature** **(A&Ww chronic)**	**0.03 - 0.42**	**1 of 25 samples** **1 of 9 events**	**Inconclusive**	**ADEQ, AGFD, and Univ. of Arizona collected 30 samples at 9 sites in 1998 - 2002. Assessed as "attaining some uses" and placed on the Planning List due to:** **1. Ammonia exceedances;** **2. Selenium exceedances; and** **3. Missing core parameter: *Escherichia coli*.**
			Dissolved oxygen **mg/L**	**> 6.0** **(90% saturation)** **(A&Ww)**	**4.6 - 13.6** **(53 - 168%)**	**1 of 38**	**Attaining**	
			pH **SU**	**6.5 - 9.0** **(A&Ww, FBC, DWS, AgL, Agl)**	**7.1 - 10.6**	**1 of 32**	**Attaining**	
			Selenium **mg/L**	**2.0** **(A&Ww chronic)**	**<2 - 3**	**2 of 17 samples** **1 of 7 events**	**Inconclusive**	

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
Lynx Lake AZL15070102-0860 A&Wc, FC, FBC, DWS, Agl, AgL	AGFD Routine Monitoring MGLYN-Dam Dam Site	1998 - 1 partial suite 2000 - 1 partial suite	Manganese (total) µg/L	980 (DWS)	627 - 1520	1 of 1		
	AGFD Routine Monitoring MGLYN-EBR East of boat ramp	2000 - 1 partial suite	Lead (total) µg/L	15 (DWS, FBC)	87	1 of 1		
			Manganese (total) µg/L	980 (DWS)	3440	1 of 1		
	AGFD Routine Monitoring MGLYN-LBR Left of boat ramp	2000 - 1 partial suite	No exceedances					
	AGFD Routine Monitoring MGLYN-ML Mid-lake	1998 - 2 partial suites	No exceedances					
	AGFD Routine Monitoring MGLYN-WBR West of boat ramp	2001 - 1 partial suite	Lead (total) µg/L	15 (DWS, FBC)	19	1 of 1		
	ADEQ Lakes Program MGLYN-A 100037	2002 - 1 partial suite	Manganese (total) µg/L	980 (DWS)	850 - 2650	1 of 1		
	ADEQ Lakes Program MGLYN-B 100038	2002 - 1 partial suite	No exceedances					
	ADEQ Lakes Program MGLYN-BR 101399	2002 - 1 bacteria	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **Agl Inconclusive** **AgL Attaining**	**1998 - 2002** **10 samples** **7 sampling events**	**Lead (total)** **µg/L**	**15** **(DWS, FBC)**	**6 - 87**	**2 of 5**	**Inconclusive**	**ADEQ and AGFD collected 10 samples at 8 sites in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to:** **1. Lead exceedances,** **2. Manganese exceedances, and** **3. Missing core parameters: turbidity, *Escherichia coli*, total boron, total mercury dissolved metals (copper and cadmium).**
			Manganese (total) **µg/L**	**980** **(DWS)**	**625 - 3440**	**3 of 7**	**Inconclusive**	
Papago Park Ponds AZL15060106B-1030 A&Ww, FC, PBC	AGFD Urban Lakes Study MGPAP-A 101047	1998 - 10 pH + DO	No exceedances					
	AGFD Urban Lakes Study MGPAP-B 101048	1998 - 10 pH + DO	No exceedances					
	AGFD Urban Lakes Study MGPAP-AB (composite of sites A and B) 101057	1998 - 3 partial suites	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Attaining** **PBC Inconclusive**	**1998** **23 samples** **10 sampling events**	**No exceedances**					**AGFD collected 23 samples at 2 sites for ADEQ in 1998. Assessed as "attaining some uses." Placed on the Planning List due to missing core parameters: *Escherichia coli* and turbidity.**
Tempe Town Lake AZL15060106B-1588 A&Ww, FC, FBC	City of Tempe 4 sites (below dam, mid lake, above dam, south shore) MGTTL	1999 - 7 total metals 2000 - 12 total metals 2001 - 12 total metals 2002 - 11 total metals, 100 field*	Mercury (total) µg/L	0.6 (FC)	<0.5 - 0.8	4 of 42		*Total metals samples were taken at the downstream dam site only. Field parameters were collected at all 4 sites. Additional field samples were taken prior to 2002. See comment in summary row.

TABLE 13. MIDDLE GILA WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCES OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD (DESIGNATED USE)	RANGE OF RESULTS	FREQUENCY EXCEEDED STANDARD	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ Lakes Program MGTTL-A 101316	2002 - 4 partial suites	No exceedances					
	ADEQ Lakes Program MGTTL-B 101315	2002 - 3 partial suites	No exceedances					
	Summary Row A&Ww Attaining FC Attaining FBC Attaining	1999 - 2002 149 samples 56 sampling events	Mercury (total) µg/L	0.6 (FC)	<0.5 - 0.8	4 of 42	Attaining	ADEQ and the City of Tempe collected 149 samples from 6 sites. High pH levels occurred until the city began algaecide treatment in 2002. Since April 2002, pH levels have met standards; therefore, pH and dissolved oxygen samples prior to treatment date were not included in this assessment. Assessed as "attaining all uses." Note that ADEQ and the City of Tempe conducted "clean" mercury sampling in 2003 and found no exceedances of dissolved or total mercury water quality standards.

TABLE 14. MIDDLE GILA WATERSHED -- ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
MIDDLE GILA WATERSHED -- STREAM ASSESSMENT				
Agua Fria River Sycamore Creek - Big Bug Creek 9 miles AZ15070102-023	A&Ww Attaining FC Attaining FBC Attaining DWS Attaining AgI Attaining AgL Attaining Category 1 – Attaining All Uses			
Agua Fria River Little Squaw Creek - Cottonwood Creek 6 miles AZ15070102-017	A&Ww Attaining FC Attaining FBC Attaining DWS Attaining AgI Attaining AgL Attaining Category 1 – Attaining All Uses			
Antelope Creek headwaters - Martinez Creek 16 miles AZ15070103-010	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Arizona Canal Granite Reef Dam - Cholla WTP 33 miles AZ15060106B-099A	DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: total fluoride, total metals (arsenic, chromium, copper, lead, manganese, and mercury).		
Arizona Canal Cholla WTP - HUC boundary 15070102 2 miles AZ15060106B-099B	AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: pH and total metals (copper, lead, and manganese).		
Arnett Creek headwaters - Queen Creek 11 miles AZ15050100-1818	A&Ww Attaining FC Attaining FBC Attaining Category 1 – Attaining All Uses			
Blue John Creek headwaters - unnamed tributary to Lynx Creek 1 mile AZ15070102-471	A&Wc Inconclusive FC Inconclusive FBC Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Insufficient monitoring data to assess (1 sample). 2. Acute and chronic cadmium exceedance (1 of 1 sampling event). 3. Acute and chronic copper exceedance (1 of 1 sampling event). 4. Acute and chronic zinc exceedance (1 of 1 sampling event).		
Buckeye Canal Gila River - South Extension Canal 4 miles AZ15070101-209	AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Missing core parameters: total boron and total metals (copper, lead, and manganese). 2. Added in 2002 due to DDE exceedance (1 of 1 sample). Laboratory reporting limits for current DDE samples and older samples were too high to use results for assessment.		
Cash Mine Creek headwaters - Hassayampa River 1 mile AZ15070103-349	A&Wc Not attaining FC Inconclusive FBC Not attaining Category 4A – Not attaining	On the Planning List due to: 1. Missing core parameters: all except dissolved metals. 2. TMDL follow-up monitoring. (Acute and chronic copper exceedance in 1 of 1 sampling event, acute and chronic zinc exceedance in 1 of 1 sampling event.)		Cadmium, copper, zinc and pH TMDLs for the Hassayampa River included loadings for Cash Mine Creek (a tributary). These TMDLs were approved by EPA in 2002. Add to the Planning List for TMDL follow-up monitoring.

TABLE 14. MIDDLE GILA WATERSHED -- ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Cash Mine Creek, unnamed tributary of headwaters - Cash Mine Creek 1 mile AZ15070103-415	A&Wc Not attaining FC Inconclusive FBC Inconclusive Category 4A – Not attaining	On the Planning List due to: 1. Missing core parameters: all except dissolved metals. 2. TMDL follow-up monitoring (Acute and chronic cadmium exceedance in 1 of 1 sampling event, acute and chronic copper exceedance in 1 of 1 sampling event, lead exceedance in 1 of 1 sample, acute and chronic zinc exceedance in 1 of 1 sampling event.)		Cadmium, copper, zinc and pH TMDLs for the Hassayampa River included loadings for Cash Mine Creek, including unnamed tributary. These TMDLs were approved by EPA in 2002. Add to the Planning List for TMDL follow-up monitoring.
Cave Creek headwaters - Cave Creek Dam 33 miles AZ15060106B-026A	A&Ww Attaining FC Attaining FBC Attaining AgL Attaining Category 1 – Attaining All Uses			
Consolidated Canal 15060106B - above WTP intake 9 miles AZ15050100-074A	DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).		
Dripping Spring Wash headwaters - Gila River 20 miles AZ15050100-011	A&Ww Inconclusive FC Inconclusive FBC Inconclusive Category 3 -- Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to insufficient monitoring data.		
Eastern Canal WTP below Warner Road - terminus 9 miles AZ15050100-207B	AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).		
French Gulch headwaters - Hassayampa River 10 miles AZ15070103-239	A&Ww Impaired FC Attaining FBC Inconclusive Category 5 – Impaired (New designated uses since last assessment based on revisions of the tributary rule in 2002. AgI and AgL designated uses no longer apply.)	On the Planning List due to missing core parameters: dissolved oxygen, *Escherichia coli*, and turbidity/SSC. Remove beryllium from the Planning List. Standard modified in 2002. No exceedance of the new beryllium standard.	Add cadmium to the 303(d) List for chronic cadmium exceedances (3 of 7 sampling events). On the 303(d) List (since 1994) for copper and zinc. Acute copper exceedances in 27 of 50 sampling events, chronic copper exceedances in 38 of 50 sampling events. Acute and chronic zinc exceedances in 29 of 50 sampling events. TMDL investigation and sampling are ongoing. Delist manganese. Manganese standards were revised in 2002. No exceedances of the new manganese standard.	
Galena Gulch headwaters - Agua Fria River 6 miles AZ15070102-745	A&We Inconclusive PBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to cyanide exceedances in older data.		
Gila River Dripping Spring Wash - San Pedro River 11 miles AZ15050100-009	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to missing core parameters.		
Gila River San Pedro River - Mineral Creek 20 miles AZ15050100-008	A&Ww Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to former turbidity standard exceedances (2 of 6 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. Remove mercury from the Planning List. Listed in 2002 due to inadequate detection limits to assess mercury standards. New detection limits were lower and indicated no mercury exceedances.		

TABLE 14. MIDDLE GILA WATERSHED -- ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Gila River Mineral Creek - Donnelly Wash 16 miles AZ15050100-007	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclsuive Category 3 – Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to lack of copper and turbidity data following a spill clean-up.		
Gila River Ashurst-Hayden Dam - Florence WWTP 13 miles AZ15050100-003B	A&We Inconclusive PBC Inconclusive AgL Inconclusive Category 3 -- Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to copper exceedance (1 of 2 samples) and missing core parameters.		
Gila River Salt River - Agua Fria River 4 miles AZ15070101-015	A&Wedw Attaining FC Impaired PBC Attaining AgI Attaining AgL Attaining Category 5 -- Impaired		EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing dcision, but once listed, the reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.
Gila River Agua Fria River - Waterman Wash 12 miles AZ15070101-014	A&Wedw Inconclusive FC Impaired PBC Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to insufficient monitoring data to assess (only 1 sample). Added in 2002 due to missing core parameters.	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.
Gila River Waterman Wash - Hassayampa River 14 miles AZ15070101-010	A&Wedw Inconclusive FC Impaired PBC Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to no current monitoring data.	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.

TABLE 14. MIDDLE GILA WATERSHED -- ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Gila River Hassayampa River - Centennial Wash 7 miles AZ15070101-009	A&Wedw Inconclusive FC Impaired PBC Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to no current monitoring data.	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.
Gila River Centennial Wash - Gillespie Dam 5 miles AZ15070101-008	A&Wedw Impaired FC Impaired FBC Attaining AgI Impaired AgL Attaining Category 5 – Impaired	On the Planning List due to former turbidity standard exceedances (5 of 23 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. Remove beryllium from the Planning List. Standard modified in 2002. No exceedances of the new standard.	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants. On the 303(d) List (since 1992) due to boron exceedances (22 of 23 samples). Add selenium to the 303(d) List due to chronic exceedances (18 of 23 sampling events). Delist turbidity. Standard repealed in 2002. Add to the Planning List due to exceedances of the former standard.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream. EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Gila River Gillespie Dam - Rainbow Wash 5 miles AZ15070101-007	A&Ww Inconclusive FC Impaired FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to no current monitoring data.	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.

TABLE 14. MIDDLE GILA WATERSHED -- ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Gila River Rainbow Wash - Sand Tank 17 miles AZ15070101-005	A&Ww Inconclusive FC Impaired FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to no current monitoring data.	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.
Gila River Sand Tank - Painted Rocks Reservoir 19 miles AZ15070101-001	A&Ww Inconclusive FC Impaired FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 5 – Impaired	On the Planning List due to no current monitoring data.	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.
Grand Canal HUC boundary 15070101 - New River 5 miles AZ15070102-250	AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: field pH and total metals (copper, lead, and manganese).		
Hassayampa River headwaters - Copper Creek 11 miles AZ15070103-007A	A&Wc Not attaining FC Not attaining FBC Not attaining AgI Not attaining AgL Not attaining Category 4A – Not attaining	On the Planning List due to: 1. TMDL follow-up monitoring for cadmium, copper, pH, and zinc. (Acute cadmium exceedances in 8 of 10 sampling events, chronic cadmium exceedances in 10 of 10 sampling events, and total copper exceedances in 1 of 5 samples. Acute and chronic copper exceedances in 9 of 10 sampling events and total copper exceedances in 9 of 48 samples. Low pH in16 of 52 samples. Acute and chronic zinc exceedances in 10 of 10 sampling events.) 2. Missing core parameters: total boron, *Escherichia coli*, and total metals (mercury, manganese, copper, and lead).	Delist zinc. A zinc TMDL was approved by EPA in 2002 (see comment *). Placed on the Planning List for TMDL follow-up monitoring.	*TMDLs for cadmium, copper, pH, and zinc were approved by EPA in 2002. Note cadmium and copper were delisted in 2002 due to insufficient exceedances to meet the Impaired Waters Identification Rule; however, the draft TMDL had already been completed and submitted to EPA for approval. Placed on the Planning List for TMDL follow-up monitoring for all parameters.
Hassayampa River Copper Creek - Blind Indian Creek 20 miles AZ15070103-007B	A&Ww Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. Chronic cadmium exceedance (1 of 16 sampling events). 2. *Escherichia coli* exceedance (1 of 12 sampling events, occurred in 2001). Remove beryllium from the Planning List. Standard modified in 2002. No exceedances of the new standard.		
Hassayampa River Cottonwood Creek - Martinez Wash 32 miles AZ15070103-004	A&Ww Attaining FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 1 – Attaining All Uses	Remove arsenic, beryllium, copper, *Escherichia coli*, lead, and turbidity from the Planning List. Current data indicate that all uses are "attaining" for these parameters.		

TABLE 14. MIDDLE GILA WATERSHED -- ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Hassayampa River Sols Wash - 8 miles below Wickenburg 9 miles AZ15070103-002A	A&Ww Attaining FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to *Escherichia coli* exceedance (1 of 3 sampling events, occurred in 2002).		
Hassayampa River Buckeye Canal - Gila River 2 miles AZ15070103-001B	A&Ww Inconclusive FC Impaired FBC Attaining AgL Inconclusive Category 5 – Impaired	On the Planning List due to former turbidity standard exceedance (1 of 4 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently collecting fish tissue data in support of completing a TMDL. DDE (DDT metabolite) exceeded standards in 2 of 4 water samples.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.
Hassayampa River, unnamed tributary of headwaters - Hassayampa River 1 mile AZ15070103-417	A&Wc Inconclusive FC Inconclusive FBC Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Insufficient monitoring data to assess (1 sample). 2. Acute and chronic copper exceedance (1 of 1 sampling event).		
Indian Bend Wash headwaters - Salt River 5 miles AZ15060106B-179	A&We Inconclusive PBC Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Lead exceedance (1 of 3 samples). 2. Missing core parameters: dissolved metals (cadmium, copper, and zinc).		
Little Ash Creek headwaters - Ash Creek 18 miles AZ15070102-039	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (2 samples).		
Lynx Creek headwaters - 34 34'29"/112 21'05 13 miles AZ15070102-033A (Reach was split into coldwater and warmwater segments since last assessment. No current data in 033B. *Previous data in 033A.*)	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 -- Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to cadmium and copper exceedance (1 of 1 sample).		
Lynx Creek, unnamed tributary of headwaters - Lynx Creek 1 mile AZ15070102-124	A&Wc Inconclusive FC Inconclusive FBC Inconclusive Category 3 – Inconclusive	Add to the Planning List due to: 1. Insufficient monitoring data to assess (1 sampling event). 2. Acute and chronic cadmium exceedance (1 of 1 sampling event). 3. Acute and chronic copper exceedance (1 of 1 sampling event). 4. Acute and chronic zinc exceedance (1 of 1 sampling event).		
Martinez Canyon headwaters - Box Canyon 10 miles AZ15050100-080	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	Add to the Planning List due to insufficient monitoring data to assess (1 sampling event).		

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SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Mineral Creek headwaters - Devils Canyon 9 miles AZ15050100-012A	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 – Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to insufficient monitoring data.		
Mineral Creek Devils Canyon - Gila River 10 miles AZ15050100-012B	A&Ww Impaired FC Inconclusive FBC Inconclusive AgL Attaining Category 5 – Impaired	On the Planning List due to: 1. Former turbidity standard exceedances (7 of 41 samples above treatment). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. 2. Missing core parameters: *Escherichia coli* and total mercury.	Add selenium to the 303(d) List due to chronic selenium exceedances (19 of 41 sampling events). On the 303(d) list for copper since 1992. (Acute copper exceedances in1 of 41 sampling events; chronic copper exceeded in 2 of 41 sampling events, both in 2001.) Delist beryllium. Standards revised in 2002. No exceedances of the new standard. Delist pH and zinc. No exceedances since January, 2001, following completion of water diversion.	
New River headwaters - Interstate 17 25 miles AZ15070102-006A	A&Ww Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive	On the Planning List insufficient monitoring data to assess (1 sampling event).		
Queen Creek headwaters - Superior Mine WWTP 9 miles AZ15050100-014A	A&We Impaired PBC Attaining AgL Inconclusive Category 5 – Impaired	On the Planning List due to missing core parameters: dissolved cadmium and total lead.	On the 303(d) List (since 2002) for copper. Although current copper data are inconclusive (1 of 8 sampling events exceeded), the reach cannot be delisted until a TMDL is complete or copper data indicate designated uses are being attained.	
Queen Creek Superior Mine WWTP - Potts Canyon 6 miles AZ15050100-014B	A&Wedw Impaired PBC Inconclusive Category 5 – Impaired	On the Planning List due to: 1. Chronic selenium exceedance (1 of 1 sampling event). 2. Missing core parameters: dissolved cadmium, *Escherichia coli*, and total lead.	Add copper to the 303(d) List due to acute and chronic copper exceedances (2 of 9 sampling events, occurred in 2000 and 2002).	
Salt River 2 km below Granite Reef Dam - Interstate 10 bridge 19 miles AZ15060106B-001B	A&We Inconclusive PBC Inconclusive Category 3 – Inconclusive	On the Planning List due to insufficient monitoring data to assess (1 sampling event).		
Salt River 23rd Ave WWTP - Gila River 14 miles AZ15060106B-001D	A&Wedw Attaining FC Impaired PBC Attaining AgI Attaining AgL Attaining Category 5 – Impaired		EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Water Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this reach cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.
South Canal Granite Reef Dam - Consolidated Canal 10 miles AZ15060106B-180	DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).		

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SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Sycamore Creek Tank Canyon - Agua Fria River 18 miles AZ15070102-024B (Reach was split into coldwater and warmwater segments since the last assessment. No current data in 024A.)	A&Ww Attaining FC Attaining FBC Attaining AgL Attaining Category 1 – Attaining All Uses			
Tempe Canal HUC boundary 15050100 - Western Canal 1 mile AZ15050100-115	DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).		
Turkey Creek headwaters - unnamed tributary at 34 19'28"/112 21'28" 9 miles AZ15070102-036A (Reach was split into coldwater and warmwater segments since last assessment.)	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: dissolved oxygen, *Escherichia coli*, total boron, total metals (manganese and mercury), and turbidity/SSC.	Delist cadmium, copper, and zinc. All past and current exceedances on Turkey Creek occurred in the lower segment (036B). (Reach was split into coldwater and warmwater segments in 2002, no basis for this segment to be listed).	
Turkey Creek unnamed tributary at 34 19'28"/112 21'28" - Poland Creek 21 miles AZ15070102-036B (Reach was split into coldwater and warmwater segments since last assessment.)	A&Ww Impaired FC Attaining FBC Inconclusive AgI Inconclusive AgL Attaining Category 5 – Impaired	On the Planning List due to: 1. Acute and chronic arsenic exceedance (1 of 6 sampling events, occurred in 2001) and total arsenic exceedances (3 of 16 samples). 2. Total lead exceedances (7 of 18 samples). 2. Missing core parameters: *Escherichia coli*, total boron, total manganese, and turbidity/SSC.	Add lead to the 303(d) List for chronic lead exceedances (2 of 7 sampling events). On the 303(d) List for cadmium, copper, and zinc since 1992. (Acute and chronic cadmium exceedances in 2 of 4 sampling events, in 2001. Acute and chronic copper exceedances in 2 of 7 sampling events, in 2001. Acute and chronic zinc exceedances in 3 of 7 sampling events, in 2001). TMDL investigation is in progress.	ADEQ anticipates that EPA would also place this water on the 2004 303(d) List for total lead exceedances as 7 of 18 samples exceeded standards. For the 2002 303(d) List, EPA determined that 5 or more exceedances with less than 20 samples were sufficient to list a water as "impaired," although Arizona's Impaired Water Identification Rule would require a minimum of 20 samples.
Western Canal Tempe Canal - HUC boundary 15050100 15 miles AZ15060106B-262	AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: total metals (manganese, copper, and lead).		
Western Canal 10 miles HUC boundary 15050100 - terminus AZ15050100-990	DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 3 -- Inconclusive	On the Planning List due to missing core parameters: total metals (arsenic, chromium, lead, manganese, and copper).		
MIDDLE GILA WATERSHED -- LAKE ASSESSMENTS				
Alvord Park Lake 27 acres AZL15060106B-0050	A&Ww Impaired FC Inconclusive PBC Inconclusive Category 5 – Impaired Trophic status – Hypereutrophic	On the Planning List due to: 1. *Escherichia coli* exceedance (1 of 3 sampling events, occurred in 2002). 2. Missing core parameters: total mercury and turbidity. Remove beryllium from the Planning List. No exceedances under the new standard.	Add ammonia to the 303(d) List for chronic ammonia exceedances (4 of 6 sampling events).	
Chaparral Lake 13 acres AZL15060106B-0300	A&Ww Impaired FC Attaining PBC Impaired AgI Inconclusive Category 5 – Impaired Trophic status – Hypereutrophic	On the Planning List due to missing core parameters: total boron, *Escherichia coli*, and turbidity. Remove pH from the Planning List. Current data (4 of 24 samples exceed) indicate support of designated uses.	Add dissolved oxygen to the 303(d) List for low dissolved oxygen (6 of 24 samples). Add *Escherichia coli* to the 303(d) List for exceedances in 2 of sampling events (in 2002).	

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SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Cortez Park Lake 2 acres AZL15060106B-0410	A&Ww Impaired FC Inconclusive PBC Impaired AgI Impaired Category 5 – Impaired Trophic status – Eutrophic	On the Planning List due to: 1. Missing core parameters: *Escherichia coli*, total boron, and total mercury. 2. Fish kill in 1999 related to an algal bloom.	Add dissolved oxygen and pH to the 303(d) List for low dissolved oxygen (5 of 25 samples) and low pH (8 of 25 samples).	Fish kill in 1999 related to an algal bloom may be evidence of narrative standards violations.
Fain Lake 10 acres AZL15070102-0005	A&Ww Inconclusive FC Inconclusive PBC Inconclusive Category 3 -- Inconclusive Trophic status – Hypereutrophic	On the Planning List due to: 1. Insufficient monitoring data to assess (1 sampling event). 2. Former turbidity standard exceedance (1 of 1 sample). Investigation into the causes and sources of turbidity will be scheduled during the next monitoring cycle for this watershed.		
Lake Pleasant 2042 acres AZL15070102-1100	A&Ww Inconclusive FC Attaining FBC Inconclusive DWS Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses Trophic status -- Oligotrophic - Mesotrophic	On the Planning List due to: 1. Chronic ammonia exceedance (1 of 9 sampling events). 2. Chronic selenium exceedance (1 of 7 sampling events). 3. Missing core parameter: *Escherichia coli*. Remove fish kill from the Planning List. No fish kills reported 1998-2002.		
Lynx Lake 50 acres AZL15070102-0860	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Attaining Category 2 -- Attaining Some Uses Trophic status – Mesotrophic	On the Planning List due to: 1. Lead exceedances (2 of 5 samples). 2. Manganese exceedances (3 of 7 samples). 3. Missing core parameters: *Escherichia coli*, dissolved metals (cadmium and copper), total boron, total mercury, and turbidity.		ADEQ anticipates that EPA will use the same criteria and place this lake on the 2004 303(d) List for manganese (3 of 7 samples exceeded). For the 2002 303(d) List, EPA determined that 3 or more exceedances with less than 10 samples were sufficient to list a water as "impaired," although Arizona's Impaired Water Identification Rule would require a minimum of 5 exceedances in 20 samples.
Painted Rock Reservoir 100 acres AZL15070101-1020A	A&Ww Inconclusive FBC Inconclusive FC Impaired AgI Inconclusive AgL Inconclusive Category 5 — Impaired Trophic status not calculated	On the Planning List due to insufficient water quality monitoring data.	EPA placed this reach on the 2002 303(d) List because DDT metabolites, toxaphene, and chlordane in fish tissue led to a fish consumption advisory. EPA's listing was based on a violation of narrative water quality standards. Arizona's Impaired Waters Identification Rule requires adoption of narrative implementation procedures before the state may use narrative information in a listing decision, but once listed, this lake cannot be delisted until a TMDL is complete or sufficient data are collected to indicate that these pesticides are no longer a concern in fish tissue (fish consumption advisory removed). ADEQ is currently developing a workplan to complete a TMDL or other remedial strategy to deal with these legacy pollutants.	These pesticides do not stay in an aqueous state and bioaccumulate rapidly up the food chain. Additionally, most lab reporting limits are not low enough to use results for assessment; therefore, lack of exceedances in the water column does not provide sufficient information about pesticide problems in the stream.
Papago Park Ponds 6 acres AZL15060106B-1030	A&Ww Inconclusive FC Attaining PBC Inconclusive Category 2 -- Attaining Some Uses Trophic status – Eutrophic	On the Planning list due to missing core parameters: *Escherichia coli* and turbidity.		
Tempe Town Lake 220 acres AZL15060106B-1588	A&Ww Attaining FC Attaining FBC Attaining Category 1 – Attaining All Uses Trophic status not calculated (Designated uses have changed on this lake since the last assessment.)	Remove pH from the Planning List. Weekly pH samples have met applicable standards since treatment began in April of 2002.		

Pinto Creek, a tributary of the Salt River, near Globe, Arizona.

The Salt Watershed

This watershed is composed of the Salt River drainage from its headwaters to Granite Reef Dam, excluding the Verde River drainage. The watershed can be divided into four sub-basins: White River, Black River, Tonto Creek, and the Salt River. Perennial water in the White River and Black River provides much of the water used in the Phoenix metropolitan area.

The population of this 6,242 square mile watershed is approximately 40,500 people (2000 census), with most of this population in the Superior-Globe-Miami mining district. Land ownership is approximately: 2% private land, 1% state land, 48% federal land, and 49% Tribal land. The principal land uses are open range grazing, recreation, forestry, and mining, which is centralized in the Superior-Miami-Globe area. Nine wilderness areas have been set aside, with restricted land uses and activities.

Elevations range from 10,600 feet (above sea level) in the White Mountains to about 2,000 feet at Granite Reef Dam. The White River and Black River drainages, along with the headwaters of most of the other major tributaries in this watershed, are above 5,000 feet elevation (high desert flora and fauna). These areas support coldwater aquatic communities where perennial waters exist.

The assessment – Assessments were completed for 39 stream reaches and seven lakes in this watershed. Of the 383 stream miles assessed, 131 miles were attaining all uses (nine reaches) and 55 miles (six reaches) were assessed as impaired or not attaining a use. Of the 22,645 lake acres assessed, none were assessed as attaining all uses and 600 acres (two lakes) were assessed as impaired. All others are inconclusive or attaining some uses.

A watershed assessment map follows on the next page, illustrating stream and lake assessments by category. The Salt River **monitoring table (Table 15)** following the map summarizes the water quality data used in the assessment. It is followed by the **assessment table (Table 16)**, which bridges current assessments with past assessments and impaired water identification. Important to note in this table are comments regarding previous 303(d) lists (what has been added and removed), category designations (1 through 5), references to potential actions by EPA, and status of TMDLs.

Detailed information on how to use these tables is found at the beginning of this chapter (p. IV-1). Assessment methods and criteria can be found in Chapter III.

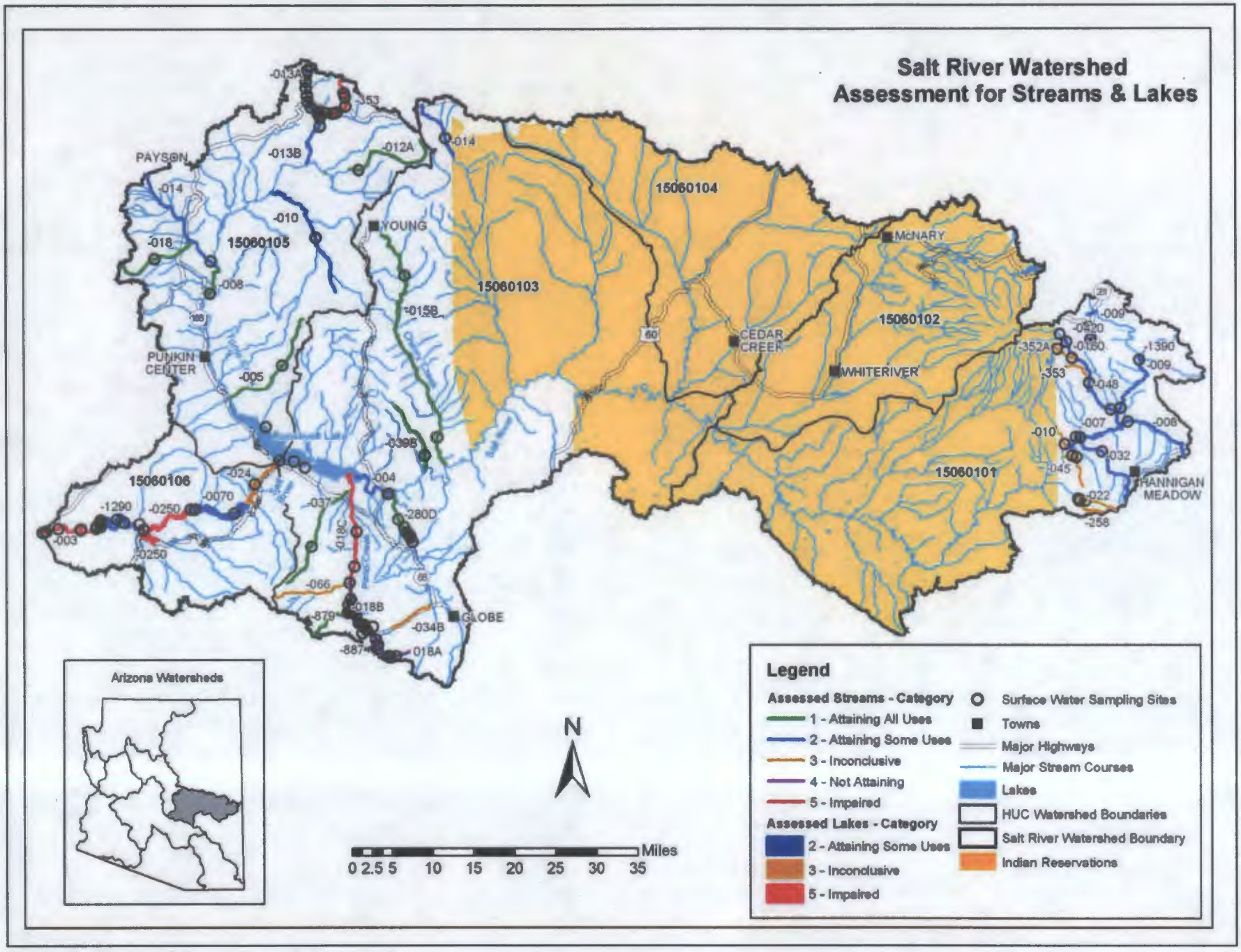

Figure 20. Watershed monitoring and assessments

TABLE 15. SALT WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
STREAM MONITORING DATA								
Bear Wallow Creek North and South Forks - Black River AZ15060101-023 A&Wc, FC, FBC, AgL Unique Water	ADEQ Ambient Monitoring Below South Fork Bear Wallow Creek SRBWL003.48 101198	2001 - 1 full suite 2002 - 1 partial + 1 full suite	No exceedances					Lab reporting limit for dissolved copper too high to use results for assessment.
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Inconclusive** **AgL Attaining**	**2001 - 2002** **3 sampling events**	**No exceedances**					**ADEQ collected 3 samples in 2001-2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters: *Escherichia coli* and dissolved copper.**
Bear Wallow Creek, North Fork headwaters - Bear Wallow Creek AZ15060101-022 A&Wc, FC, FBC, AgL Unique Water	ADEQ Biocriteria Program Above South Fork Bear Wallow Creek SRNBE000.54 100605	1998 - 1 partial suite	No exceedances					Lab reporting limits for dissolved copper samples were too high to use results for assessment.
	ADEQ Ambient Monitoring Above South Fork Bear Wallow Creek SRNBE000.06 101262	2001 - 1 full suite 2002 - 1 full suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998** **3 sampling events**	**No exceedances**					**ADEQ collected 3 samples at 2 sites in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: *Escherichia coli*, dissolved metals (copper and zinc), and total metals (mercury, copper, and lead).**
Bear Wallow Creek, South Fork headwaters - Bear Wallow Creek AZ15060101-258 A&Wc, FC, FBC, AgL Unique Water	ADEQ Ambient Monitoring Upstream of horse pack trail SRNBE000.10 101261	2001 - 1 full suite 2002 - 1 full suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998** **2 sampling events**	**No exceedances**					**Insufficient monitoring data to assess.**

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Beaver Creek headwaters - Black River AZ15060101-008 A&Wc, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Near Sprucedale SRBEV000.77 100373	2001 - 1 full + 1 partial suite 2002 - 2 full + 4 partial suites	Turbidity (former standard) NTU	10 (A&Wc)	6.4 - 17.2	2 of 8		Lab reporting limits for dissolved copper samples too high to use results for assessment.
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **AgI Attaining** **AgL Attaining**	**2001 - 2002** **8 sampling events**	**Turbidity (former standard)** **NTU**	**10** **(A&Wc)**	**6.4 - 17.2**	**2 of 8**	**Inconclusive (see comment)**	**ADEQ collected 3 samples in 2001-2002. Assessed as "attaining some uses" and placed on the Planning List due to exceedances of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.** **Also placed on Planning List due to missing core parameter: dissolved copper.**
Black River Beaver Creek - Reservation Creek AZ15060101-007 A&Wc, FC, FBC, DWS, AgI, AgL	ADEQ Ambient Monitoring Upstream of Forest Service Road #25 SRBLR029.71 101202	2001 - 1 full suite 2002 - 1 full + 1 partial suite	No exceedances					Lab reporting limits for dissolved copper samples too high to use results for assessment.
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Inconclusive** **DWS Attaining** **AgI Attaining** **AgL Attaining**	**2001 - 2002** **3 sampling events**	**No exceedances**					**ADEQ collected 3 samples in 2001-2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters: *Escherichia coli* and dissolved copper.**
Black River, East Fork headwaters-Black River AZ15060101-009 A&Wc, FC, FBC, DWS, AgI, AgL	ADEQ Ambient Monitoring Below Three Forks Creek SREFB008.98 101203	2001 - 1 full suite 2002 - 3 full suites	No exceedances					Lab reporting limits for dissolved copper too high to use results for assessment.
	ADEQ Ambient Monitoring At Buffalo Crossing SREFB000.81 100375	2001 - 1 full suite 2002 - 3 full suites	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **DWS Attaining** AgI Attaining AgL Attaining	**2001 - 2002** **8 samples** **4 sampling events**	**No exceedances**					**ADEQ collected 8 samples at 2 sites in 2001-2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameter: dissolved copper.**
Black River, West Fork headwaters - Black River AZ15060101-048 A&Wc, FC, FBC, DWS, AgI, AgL	ADEQ Biocriteria Program Above Thompson Creek confluence SRWFB011.08 100692	1998 - 1 partial suite	No exceedances					Lab reporting limits for dissolved metals samples were too high to assess the chronic standards.
	ADEQ Ambient Monitoring Below Forest Road #116 SRWFB009.96 101204	2001 - 1 full suite 2002 - 3 full suites	No exceedances					

TABLE 15. SALT WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ Ambient Monitoring At Buffalo Crossing SRWFB000.78 100376	2001 - 1 full +1 partial suite 2002 - 3 full + 7 partial suites	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **DWS Attaining** **Agl Attaining** **AgL Attaining**	**1998 - 2002** **17 samples** **13 sampling events**	**No exceedances**					**ADEQ collected 8 samples at 2 sites in 2001-2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters: dissolved metals (cadmium, copper, and zinc).**
Campaign Creek headwaters - Pinto Creek AZ15060103-037 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring At Superstition Wilderness SRCGN007.70 100431	2001 - 1 full suite 2002 - 2 full + 1 partial suite	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **AgL Attaining**	**2001 - 2002** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2001-2002. Assessed as "attaining all uses."**
Canyon Creek headwaters - White Mountain Apache Reservation AZ15060103-014 A&Wc, FC, FBC, DWS, Agl, AgL	ADEQ Ambient Monitoring Near Young, Arizona SRCYN031.80 100370	2001 - 1 full suite 2002 - 2 full + 1 partial suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **DWS Attaining** **Agl Attaining** **AgL Attaining**	**2001 - 2002** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2001-2002. Assessed as "attaining some uses" and placed on the Planning List due to a fish kill related to the Rodeo-Chediski Fire in 2002. Further monitoring is needed to determine long-term negative impacts from the fire.**
Cherry Creek tributary at 34 05'09"/110 56'04" - Salt River AZ15060103-015B A&Ww, FC, FBC, Agl, AgL	ADEQ Ambient Monitoring 50 meters upstream road SRCHE023.90 101323	2001 - 1 full suite 2002 - 2 full + 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring Upstream Road #203 SRCHE003.51 100347	2001 - 1 full suite 2002 - 3 full suites	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **Agl Attaining** **AgL Attaining**	**2001 - 2002** **8 samples** **7 sampling events**	**No exceedances**					**ADEQ collected 8 samples at 2 sites in 2001-2002. Assessed as "attaining all uses."**
Christopher Creek headwaters - Tonto Creek AZ15060105-353 A&Wc, FC, FBC, Agl, AgL	ADEQ TMDL Program Upstream of recreation area SRCRS006.04 101027	2000 - 3 partial suites 2002 - 6 field + nutrients	No exceedances					

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ TMDL Program Downstream of recreation SRCRS005.70 101028	2000 - 3 partial suites 2002 - 6 field + nutrients	No exceedances					
	ADEQ TMDL Program Above Christopher & Hwy 260 SRCRS004.47 101029	2000 - 3 partial suites 2002 - 6 field + nutrients	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.7 - 9.7 (88 - 116%)	1 of 9		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	ADEQ TMDL Program By cross-section cut SRCRS003.56 101030	2000 - 3 partial suites 2002 - 4 field + nutrients	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.5 - 10.4 (79 - 107%)	2 of 7		
			Escherichia coli CFU/100 ml	235 (FBC)	7 - 260	1 of 3		
	ADEQ TMDL Program Above Christopher Cr. Camp and below Hunter Creek SRCRS002.85 101031	2000 - 3 partial suites 2002 - 2 field + nutrients	Turbidity (former standard) NTU	10 (A&Wc)	2 - 13	1 of 5		
	ADEQ TMDL Program Below Christopher Cr. Camp, above Boy Scout Ranch SRCRS002.26 101032	2000 - 3 partial suites 2002 - 2 field + nutrients	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.8 - 9.4 (84 - 108%)	1 of 5		
			Turbidity (former standard) NTU	10 (A&Wc)	4 - 14	1 of 4		
	ADEQ TMDL Program Near top of Box Canyon, below Boy Scout Camp SRCRS001.49	2000 - 1 *Escherichia coli*	*Escherichia coli* CFU/100 ml	235 (FBC)	238	1 of 1		
	ADEQ TMDL Program Near top of Box Canyon, below Boy Scout Camp SRCRS001.36	2000 - 1 *Escherichia coli*	No exceedances					
	ADEQ TMDL Program At top of Box Canyon, Below Boy Scout Ranch SRCRS001.24 101033	2000 - 3 partial suites 2002 - 3 field + nutrients	*Escherichia coli* CFU/100 ml	235 (FBC)	1 - 689	2 of 3		One occurred during a storm flow.
			Turbidity (former standard) NTU	10 (A&Wc)	9 - 89	1 of 5		
	ADEQ TMDL Program Box Canyon pools SRCRS001.23 - 1.18	2000 - 1 *Escherichia coli*	*Escherichia coli* CFU/100 ml	235 (FBC)	133 - 501	1 of 1		
	ADEQ Ambient Monitoring Downstream of Box Canyon SRCRS000.18 100367	1999 - 1 nutrient suite 2001 - 1 partial suite 2002 - 3 full suites	Turbidity (former standard) NTU	10 (A&Wc)	2 - 30	2 of 4		

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ TMDL Program Upstream of Tonto Creek, downstream of Box Canyon SRCRS000.08 101034	2000 - 3 partial suites 2002 - 3 field + nutrients	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.3 - 10.8 (82 - 105%)	2 of 6		
			Turbidity (former standard) NTU	10 (A&Wc)	11 - 26	4 of 5		
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Impaired** **AgI Attaining** **AgL Attaining**	**1999 - 2002** **64 samples** **7 sample events**	**Dissolved oxygen** **mg/L**	**> 7.0** **(90% saturation)** **(A&Wc)**	**5.8 - 11.2** **(79-116%)**	**5 of 54**	**Attaining**	**ADEQ collected 64 samples at 12 sites in 1999-2002. Assessed as "impaired" due to *Escherichia coli* exceedances.** **Reach was on the 2002 303(d) List due to turbidity. The Aquatic and Wildlife use is assessed as "inconclusive" and placed on the Planning List due to exceedances of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
			Escherichia coli **CFU/100 ml**	**235** **(FBC)**	**1 - 689**	**2 of 7 events** **(in 2000)**	**Impaired**	
			Turbidity (former standard) **NTU**	**10** **(A&Wc)**	**<1 - 89**	**9 of 54**	**Inconclusive (see comment)**	
Coon Creek Unnamed tributary at 33 46'42"/110 54'25" - Salt River AZ15060103-039B A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring At Forest Service Road 203 Near Roosevelt Lake SRCOO001.73 100379	2001 - 1 full suite 2002 - 3 full suites	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **AgL Attaining**	**2001 - 2002** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2001-2002. Assessed as "attaining all uses."**
Cottonwood Canyon headwaters - Pinto Creek AZ15060103-891 A&We, PBC (tributary rule)	BHP Mining - NPDES MG2-8b Below Cottonwood Tailings	2002 - 2 field + metals	No exceedances					
	Summary Row **A&We Inconclusive** **PBC Inconclusive**	**2002** **2 sampling events**	**No exceedances**					**Insufficient monitoring data to assess.**
Deer Creek headwaters - Rye Creek AZ15060105-018 A&Wc, FC, FBC (tributary rule)	ADEQ Biocriteria Program At Mazatzal Wilderness SRD4E003.91 100531	2002 - 3 full suites	No exceedances					
	Summary Row **A&Wc Attaining** **FC Attaining** **FBC Attaining**	**2002** **3 sampling events**	**No exceedances**					**ADEQ collected 3 samples in 2002. Assessed as "attaining all uses."**
Fish Creek headwaters - Black River AZ15060101-032 A&Wc, FC, FBC, AgI, AgL	ADEQ Biocriteria Program Near Bear Wallow Creek Wilderness SRFIS002.53 100553	1998 - 1 partial suite	Copper (dissolved) µg/L	varies by hardness (A&Wc acute)	33	1 of 1		Lab reporting limits for dissolved copper and zinc too high to use results for assessment.
				varies by hardness (A&Wc chronic)	33	1 of 1		

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ Ambient Monitoring Above Black River SRFIS000.01 101200	2001 - 1 full suite 2002 - 2 full suites	No exceedances					
	Summary Row A&Wc Inconclusive FC Attaining FBC Inconclusive Agl Attaining AgL Attaining	**1998 - 2002** **4 sampling events**	**Copper (dissolved) µg/L**	**varies by hardness (A&Wc acute)**	**<10 - 33**	**1 of 1 event (in 1998)**	**Inconclusive**	**ADEQ collected 4 samples at 2 sites in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to copper exceedance and missing core parameters: *Escherichia coli*, dissolved metals (copper and zinc).**
				varies by hardness (A&Wc chronic)	**<10 - 33**	**1 of 1 event**	**Inconclusive**	
Gibson Mine Tributary headwaters - Pinto Creek AZ15060103-887 A&Ww, FC, FBC (tributary rule)	ADEQ TMDL Program Above Pinto Creek SRGIM000.15 101071	2000 - 1 partial suite 2001 - 4 partial suites	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	2100 - 5900	5 of 5		
				varies by hardness (A&Ww chronic)	2100 - 5900	5 of 5		
			Copper (total) µg/L	1300 (FBC)	2100 - 5900	5 of 5		
			pH (low) SU	6.5 - 9.0 (A&Ww, FBC)	5.5 - 6.5	1 of 4		
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	96.0	1 of 1		
				varies by hardness (A&Ww chronic)	96.0	1 of 1		
	Summary Row A&Ww Not attaining FC Inconclusive FBC Inconclusive	**2000 - 2001** **5 sampling events**	**Copper (dissolved) µg/L**	**varies by hardness (A&Ww acute)**	**2100 - 5900**	**5 of 5 samples 5 of 5 events (in 2000-2001)**	**Not attaining**	**ADEQ collected 5 samples at 2 sites in 2000-2001. Copper loadings for this tributary were addressed in the Pinto Creek TMDL approved by EPA in 2001.** **Assessed as "not attaining" due to copper exceedances. Placed on the Planning List for TMDL follow-up monitoring, pH and zinc exceedances, and missing core parameters: *Escherichia coli*, turbidity/SSC, dissolved metals (cadmium and zinc), and total mercury.** **Monitoring for a Phase II copper TMDL is ongoing.**
				varies by hardness (A&Ww chronic)	**2100 - 5900**	**5 of 5 samples 5 of 5 events**	**Not attaining**	
			Copper (total) µg/L	**1300 (FBC)**	**2100 - 5900**	**5 of 5**	**Not attaining**	
			pH (low) SU	**6.5 - 9.0 (A&Ww, FBC)**	**6.49**	**1 of 4**	**Inconclusive**	
			Zinc (dissolved) µg/L	**varies by hardness (A&Ww acute)**	**96.0**	**1 of 1 event**	**Inconclusive**	
				varies by hardness (A&Ww chronic)	**96.0**	**1 of 1 event**	**Inconclusive**	
Gold Gulch Canyon headwaters - Pinto Creek AZ15060103-894 A&We, PBC (tributary rule)	BHP Mining — NPDES Below Gold Gulch Weir MG1-12b	2002 - 1 field + metals	No exceedances					
	Summary Row A&We Inconclusive PBC Inconclusive	**2002** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Greenback Creek headwaters - Tonto Creek AZ15060105-005 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Below Conway Ranch SRGRE005.74 101221	2001 - 1 full suite 2002 - 2 full suites	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **AgL Attaining**	**2001 - 2002** **3 sampling events**	**No exceedances**					**ADEQ collected 3 samples in 2001-2002. Assessed as "attaining all uses."**
Haigler Creek headwaters - unnamed reach at 34 12'23.1"/111 00'11" AZ15060105-012A A&Wc, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Near Boy Scout Camp SRHAG004.41 100372	2001 - 1 full suite 2002 - 2 full + 1 partial suite	No exceedances					
	Summary Row **A&Wc Attaining** **FC Attaining** **FBC Attaining** **AgI Attaining** **AgL Attaining**	**2001 - 2002** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2001-2002. Assessed as "attaining all uses."**
Haunted Canyon headwaters - Pinto Creek AZ15060103-879 A&Ww, FC, FBC (tributary rule)	ADEQ Ambient Monitoring Below Powers Gulch SRHNC002.41 101131	2000 - 1 partial suite 2001 - 1 full suite 2002 - 3 full suites	Dissolved oxygen mg/L	6.0 (90% saturation) (A&Ww)	5.5 - 8.6 (68.9 - 106.3%)	1 of 5		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	ADEQ TMDL Program At Carlota Weir HC-4 SRPNT002.29 101072	2000 - 2 partial suites 2001 - 2 field + copper	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining**	**2000 - 2002** **9 samples** **8 sampling events**	**No exceedances**					**ADEQ collected 9 samples at 2 sites in 2000-2002. Assessed as "attaining all uses."**
Hay Creek headwaters - West Fork Black River AZ15060101-353 A&Wc, FC, FBC, AgL Unique Water	ADEQ Ambient Monitoring Above West Fork Black River SRHAY000.02 101299	2001 - 1 full suite 2002 - 1 full suite	No exceedances					Lab reporting limits for dissolved cadmium, copper, and zinc samples were too high to use results for assessment.
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**2001 - 2002** **2 sampling events**	**No exceedances**					**Insufficient monitoring data to assess.**
Miller Springs Canyon headwaters - Pinto Creek AZ15060103-892 A&Ww, FC, FBC (tributary rule)	BHP Mining MPO-1b Below Gold Gulch Weir	2000 - 1 field + metals 2001 - 4 field + metals 2002 - 3 field + metals	Selenium µg/L	2.0 (A&Ww chronic)	<5 - 3.7	4 of 4		Lab reporting limits for 4 additional selenium samples were too high to use results for assessment.
			Turbidity (former standard) NTU	50 (A&Ww)	4 - 95	1 of 8		

TABLE 15. SALT WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive**	**2000 - 2002** **8 sampling events**	**Selenium** **µg/L**	**2.0** **(A&Ww chronic)**	**<5 - 3.7**	**4 of 4**	**Inconclusive*** **(see comment)**	**BHP collected 8 samples in 2000 - 2002. Assessed as "inconclusive" and placed on the Planning List due to selenium exceedances and missing core parameters: total mercury, dissolved oxygen, and *Escherichia coli*.** *** BHP investigation indicates that selenium exceedances may be a laboratory method providing false positive results. See comment in Pinto Creek.** **Also placed on the Planning List due to exceedance of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
			Turbidity (former standard) **NTU**	**50** **(A&Ww)**	**4 - 95**	**1 of 8**	**Inconclusive**	
Pinal Creek Jesse Lane - Salt River AZ15060103-280D A&Ww, FBC, FC, AgL ***(After groundwater treatment plant installed in May 2001)***	USGS Special Investigation At Setka Ranch SRPNL005.78 101491	After May 2001 - 3 partial suites 2002 - 4 partial suites	No exceedances					Low dissolved oxygen due to naturally occurring ground water upwelling and low flow conditions, and not anthropogenic causes. Not considered in final assessment.
	Phelps Dodge & Hydro-GeoChem WQARF Monitoring At Pringle SRPNL005.78	After May 2001 - 8 partial suites 2002 - 11 partial suites	pH (low) SU	6.5 - 9.0 (A&Ww, FBC, AgL)	6.2 - 7.7	1 of 19		
	USGS Special Investigation At Site Z4.7 SRPNL005.461 101507	After May 2001 - 1 partial suite	Dissolved oxygen mg/L	6.0 (A&Ww)	3.8	1 of 1		
	USGS Special Investigation At Site Z5 SRPNL005.37 101509	After May 2001 - 2 partial suites 2002 - 1 partial suites	Dissolved oxygen mg/L	6.0 (90% saturation) (A&Ww)	4.2 - 8.((20 - 97%,	1 of 3		
	USGS Special Investigation At Site Z5.7 SRPNL005.23 101510	After May 2001 - 3 partial suites 2002 - 4 partial suites	No exceedances					
	USGS Special Investigation At Site Z6.2 SRPNL005.17 101511	After May 2001 - 2 partial suites	No exceedances					
	USGS Special Investigation At Site Z7 SRPNL005.05 101513	After May 2001 - 2 partial suites 2002 - 3 partial suites	Dissolved oxygen mg/L	6.0 (A&Ww)	5.5 - 6.0	2 of 5		
	USGS Special Investigation At Site Z8.3 SW SRPNL004.96 101515	2002 - 2 partial suites	No exceedances					

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	USGS Special Investigation At Site Z9A SRPNL004.77 101516	After May 2001 - 3 partial suites 2002 - 4 partial suites	Dissolved oxygen mg/L	6.0 (A&Ww)	5.4 - 7.5	2 of 4		
	USGS Special Investigation At Site JJ15 SRPNL004.36 101518	After May 2001 - 1 partial suite	No exceedances					
	USGS Fixed Station At Inspiration Dam #09498400 SRPNL003.30 101727	After May 2001 - 4 full suites 2002 - 5 full suites	No exceedances					
	Summary Row A summary of exceedances before and after treatments is shown by parameter in the comment column to the right. Only samples taken after the installation of the ground water remediation facility in 2001 are considered for the assessment in the final summary row below.		Beryllium (dissolved) µg/L	5.3 (A&Ww chronic)	Before treatment: <0.5 - 10 After 1999 treatment: <0.5 - 10 After 2001 treatment: 0.6 - <4.3			Before treatment: 5 of 13 After 1999 treatment: 0 of 14 After 2001 treatment: 0 of 7
			Cadmium (dissolved) µg/L	varies by hardness (A&Ww acute)	Before treatment: <0.5 - 54 After 1999 treatment: <0.5 - 10 After 2001 treatment: <0.5 - 4			Before treatment: 9 of 24 After 1999 treatment: 0 of 19 After 2001 treatment: 0 of 13
				varies by hardness (A&Ww chronic)				Before treatment: 14 of 24 After 1999 treatment: 0 of 19 After 2001 treatment: 0 of 13
			Cadmium (total) µg/L	50 (AgL)	Before treatment: <0.5 - 55 After 1999 treatment: <0.5 - 10 After 2001 treatment: <0.5 - <0.1			Before treatment: 1 of 46 After 1999 treatment: 0 of 50 After 2001 treatment: 0 of 12
			Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	Before treatment: <1 - 283 After 1999 treatment: <1 - 70 After 2001 treatment: <1 - <30			Before treatment: 13 of 24 After 1999 treatment: 1 of 20 After 2001 treatment: 0 of 13
				varies by hardness (A&Ww chronic)				Before treatment: 18 of 24 After 1999 treatment: 1 of 20 After 2001 treatment: 0 of 13
			Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	Before treatment: <0.1- 0.1 After 1999 treatment: <0.1 After 2001 treatment: <0.1			Before treatment: 1 of 1 (Sample result exceeding standard was at detection limit. Reporting limit too high on 9 other samples.) After 1999 treatment: (Reporting limits too high on 7 samples.) After 2001 treatment: (Reporting limits too high on 6 samples.)
			Nickel (dissolved) µg/L	varies by hardness (A&Ww chronic)	Before treatment: <10 - 1190 After 1999 treatment: <10 - 350 After 2001 treatment: <50 - <90			Before treatment: 21 of 24 After 1999 treatment: 2 of 19 After 2001 treatment: 0 of 13
			pH (low) SU	6.5 - 9.0 (A&Ww, FBC, AgL)	Before treatment: 5.4 - 8.2 After 1999 treatment: 6.1 - 7.7 After 2001 treatment: 6.2 - 7.7			Before treatment: 52 of 108 After 1999 treatment: 8 of 98 After 2001 treatment: 1 of 59
			Selenium (total) µg/L	2.0 (A&Ww chronic)	Before treatment: <1 - 8.7 After 1999 treatment: <1 - 1 After 2001 treatment: <1 - 8.7			Before treatment: 1 of 6 After 1999 treatment: 0 of 7 After 2001 treatment: 0 of 6

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	Before treatment: 3 - 1800 After 1999 treatment: 3 - 160 After 2001 treatment: 6 - 30			Before treatment: 18 of 24 After 1999 treatment: 0 of 19 After 2001 treatment: 0 of 13
				varies by hardness (A&Ww chronic)				Before treatment: 18 of 24 After 1999 treatment: 0 of 19 After 2001 treatment: 0 of 13
	Final Summary Row (Pinal Creek), considering only data collected after 2001 treatment initiated							
	A&Ww Attaining FC Attaining FBC Attaining AgL Attaining	May 2001 - 2002 After treatment facility installed 59 total samples 13 sample events	pH (low) SU	6.5 - 9.0 (A&Ww, FBC, AgL)	6.2 - 7.7	1 of 59	Attaining	USGS and Phelps Dodge collected 59 samples at 11 sites after the groundwater treatment plant was installed in May, 2001. The reach is assessed as "attaining all uses" Follow-up monitoring will continue, as post-treatment samples have been collected during a sustained drought.
Pinto Creek headwater - tributary at 33 19'27"/110 54'56" AZ15060103-018A A&Wc, FC, FBC, AgI, AgL	ADEQ TMDL Program At Simpson Dam SRPNT023.13	2001 - 2 field + copper	No exceedances					
	Summary Row A&Wc Not attaining FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive	2001 2 sample events	No exceedances					Copper TMDL completed by EPA in 2001. Reach will remain assessed as "not attaining" until sufficient copper monitoring to show that all uses are meeting copper standards. Insufficient monitoring data to assess.
Pinto Creek tributary at 33 19'27"/110 54'56" - Ripper Spring AZ15060103-018B A&Ww, FC, FBC, AgI, AgL	ADEQ TMDL Program Above Henderson Ranch Mines SRPNT023.02 101039	2000 - 1 full suite 2001 - 3 field + copper	pH (low) SU	6.5 - 9.0 (A&Ww, FBC, AgL)	8.1 - 7.8	1 of 3		
	ADEQ TMDL Program At Henderson Ranch Mines SRPNT023.00	2001 - 3 field + copper	Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	15.0 - 22.0	1 of 3		
	ADEQ TMDL Program At TS-2, below Henderson Ranch Mines SRPNT022.92	2001 - 1 field + copper	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	2000	1of 1		
				varies by hardness (A&Ww chronic)	2000	1 of 1		
			Copper (total) µg/L	500 (AgL)	1900	1 of 1		
				1300 (FBC)	1900	1 of 1		
			pH (low) SU	6.5 - 9.0 (A&Ww, FBC, AgL)	3.1	1 of 1		
				4.5 - 9.0 (AgI)	3.1	1 of 1		

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STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ TMDL Program Below Henderson Ranch Mines SRPNT022.89 101061	2000 - 1 full suite 2001 - 3 field + copper	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	14.0 - 44.0	1 of 4		
				varies by hardness (A&Ww chronic)	14.0 - 44.0	3 of 4		
			Zinc (dissolved) µg/L	varies by hardness (A&Ww acute)	390	1 of 1		
				varies by hardness (A&Ww chronic)	390	1 of 1		
	ADEQ TMDL Program Above Gibson Mine Tributary SRPNT021.31 101062	2000 - 1 full suite 2001 - 3 field +copper	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	15 - 40	3 of 5		
				varies by hardness (A&Ww chronic)	15 - 40	5 of 5		
			pH (low) SU	6.5 - 9.0 (A&Ww, FBC, AgL)	5.9 - 8.4	1 of 4		
	ADEQ TMDL Program Below Gibson Mine Tributary SRPNT021.30 101063	2001 - 1 full suite	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	560	1 of 1		
				varies by hardness (A&Ww chronic)	560	1 of 1		
			Copper (total) µg/L	500 (AgL)	640	1 of 1		
	ADEQ TMDL Program At Old Highway 60 (PC-100) SRPNT020.65 101064	2000 - 1 full suite 2001 - 4 field + copper	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	32 - 920	5 of 5		
				varies by hardness (A&Ww chronic)	32 - 920	5 of 5		
			Copper (total) µg/L	500 (AgL)	82 - 810	1 of 5		
			pH (low) SU	6.5 - 9.0 (A&Ww, FBC, AgL)	5.8 - 7.9	1 of 5		
	ADEQ TMDL Program At Bronx tributary east of main adit (TS-4) SRPNT019.83	2001 - 1 field + copper	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	360	1 of 1		
				varies by hardness (A&Ww chronic)	360	1 of 1		
	ADEQ TMDL Program At BHP 005 NPDES outfall SRPNT019.07	2001 - 1 field + copper	No exceedances					
	ADEQ TMDL Program Above Cactus Breccia SRPNT018.95	2001 - 1 field + copper	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	33	1 of 1		
				varies by hardness (A&Ww chronic)	33	1 of 1		
	ADEQ TMDL Program Below Cactus Breccia SRPNT018.47	2001 - 1 field + copper	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	47	1 of 1		

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
				varies by hardness (A&Ww chronic)	47	1 of 1		
	BHP Mining - NPDES AMP1 Above Cottonwood Gulch SRPNT019.41	1999 - 2 field + metals 2000 - 1 field + metals 2001 - 2 field + metals	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<4.0 - 78	1 of 5		
				varies by hardness (A&Ww chronic)	<4.0 - 78	2 of 5		
			Turbidity (former standard) NTU	50 (A&Ww)	2.4 - 55.1	1 of 5		
	BHP Mining - NPDES AMP2 Above Cottonwood Gulch SRPNT018.91	1999 - 2 field + metals 2000 - 1 field + metals 2001 - 2 field + metals	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	9.0 - 71	1 of 5		
				varies by hardness (A&Ww chronic)	9.0 - 71	2 of 5		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<1.0 - 3.0	1 of 5		
			Turbidity (former standard) NTU	50 (A&Ww)	0.17 - 75.3	1 of 5		
	BHP Mining - NPDES AMP3 below Cottonwood Gulch SRPNT018.49	1999 - 3 field + metals 2000 - 1 field + metals 2001 - 2 field + metals 2002 - 1 field + metals	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	24 - 78	2 of 7		
				varies by hardness (A&Ww chronic)	24 - 78	4 of 7		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<1.0 - 4.9	2 of 7		
	BHP Mining - NPDES DW24 Below Miller Springs Gulch SRPNT017.60	1998 - 2 field + metals 1999 - 4 field + metals 2000 - 4 field + metals 2001 - 4 field + metals	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	4.0 - 63	1 of 15		
				varies by hardness (A&Ww chronic)	4.0 - 63	2 of 15		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<1.0 - 4.4	4 of 12		
	BHP Mining - NPDES PC2UP Below Miller Springs Gulch SRPNT017.13	1998 - 2 field + metals 1999 - 4 field + metals 2000 - 4 field + metals 2001 - 4 field + metals	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<4.0 - 57	1 of 13		
				varies by hardness (A&Ww chronic)	<4.0 - 57	1 of 13		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<1.0 - 3.3	2 of 12		
			Turbidity (former standard) NTU	50 (A&Ww)	0.73 - 111.0	1 of 13		

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ TMDL Program At USGS Gage Below Haunted Canyon SRPNT016.18 101068	2000 - 2 full suites 2001 - 4 field + 3 copper	Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<10 - 44	4 of 5		
				varies by hardness (A&Ww acute)	<10 - 44	3 of 5		
			Turbidity (former standard) NTU	50 (A&Ww)	60.3	1 of 1		
	BHP Mining - NPDES AMP5 Below Gold Gulch Weir & Haunted Canyon	2002 - 1 field + metals	Selenium (total) µg/L	2.0 (A&Ww chronic)	2.5	1 of 1		
	BHP Mining - NPDES AMP4 - AMP4IS Below Gold Gulch Weir & Haunted Canyon SRPNT015.49	1998 - 2 field + metals 1999 - 4 field + metals 2000 - 4 field + metals 2001 - 4 field + metals 2002 - 3 field + metals	Selenium (total) µg/L	2.0 (A&Ww chronic)	<1.0 - 4.0	1 of 16		
			Turbidity (former standard) NTU	50 (A&Ww)	1.3 - 160	4 of 17		
	Summary Row **A&Ww Not attaining** **FC Inconclusive** **FBC Inconclusive** **AgI Inconclusive** **AgL Attaining**	**1998 - 2002** **95 samples** **22 sample events**	**Copper (dissolved)** **µg/L**	**varies by hardness** **(A&Ww acute)**	**<3.0 - 2000**	**23 of 95 samples** **6 of 22 events** **(in 2000 and 2001)**	**Not attaining**	**ADEQ & BHP's consultant collected 95 samples at 19 sites in 1998-2002. A copper TMDL was approved by EPA in 2001.** **Assessed as "not attaining" due to copper exceedances and placed on the Planning List for TMDL follow-up monitoring, exceedance of the zinc standard, and missing core parameters: *Escherichia coli*, total boron, and total mercury.** ***BHP investigated selenium exceedances in its dataset and found that the analytical method may be responsible for false positive laboratory results. Since use of an alternative laboratory analysis method, no further selenium exceedances have occurred. (Changed at all sites by the fall of 2002.)**
				varies by hardness **(A&Ww chronic)**	**<3.0 - 2000**	**34 of 95 samples** **9 of 22 events**	**Not attaining**	
			Copper (total) **µg/L**	**500** **(AgL)**	**<4.0 - 1900**	**3 of 95**	**Attaining**	
				1300 **(FBC)**	**<4.0 - 1900**	**1 of 95**	**Attaining**	
			pH (low) **SU**	**6.5 - 9.0** **(A&Ww, FBC, AgL)**	**3.1 - 8.7**	**4 of 87**	**Attaining**	
				4.5 - 9.0 **(AgI)**	**3.1 - 8.7**	**1 of 87**	**Attaining**	
			Selenium (total) **µg/L**	**2.0** **(A&Ww chronic)**	**<1.0 - 4.9**	**11 of 57 samples** **6 of 17 events**	**Inconclusive** **(see comment*)**	
			Turbidity (former standard) **NTU**	**50** **(A&Ww)**	**0.2 - 160**	**8 of 69**	**Attaining**	
			Zinc (dissolved) **µg/L**	**varies by hardness** **(A&Ww acute)**	**<4.1 - 390**	**1 of 69 samples** **1 of 22 events** **(in 2000)**	**Inconclusive**	
				varies by hardness **(A&Ww chronic)**	**<4.1 - 390**	**1 of 69 samples** **1 of 22 events**	**Inconclusive**	
Pinto Creek Ripper Spring Canyon - Roosevelt Lake AZ15060103-018C A&Ww, FC, FBC, AgI, AgL	ADEQ TMDL Program At USGS Gage near Pinto Valley Weir SRPNT011.44 101070	2000 - 2 partial suites 2001 - 4 field + copper	Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<10 - 39	2 of 6		

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	ADEQ Fixed Station At Henderson Ford West of Globe SRPNT007.13 100346	1998 - 4 full suites 1999 - 3 full suites 2000 - 3 full suites 2001 - 5 full suites 2002 - 3 full suites	Selenium (total) µg/L	2.0 (A&Ww chronic)	<5.0 - 14.0	3 of 3		Lab reporting limits for 15 additional selenium samples were too high to use results for assessment.
			Turbidity (former standard) NTU	50 (A&Ww)	0.3 - 180	2 of 17		
	Summary Row **A&Ww Impaired** **FC Attaining** **FBC Attaining** **AgI Attaining** **AgL Attaining**	**1998 - 2002** **24 sampling events**	**Copper (dissolved)** **µg/L**	**varies by hardness** **(A&Ww chronic)**	**<10 - 39**	**2 of 24 samples** **2 of 24 events**	**Impaired**	**ADEQ collected 24 samples at 2 sites in 1998-2002. Assessed as "impaired" due to copper and selenium exceedances.** **Note that the state laboratory used a different analytical method than the one suspected of causing false positive results for BHP (see comment in above reach).**
			Selenium (total) **µg/L**	**2.0** **(A&Ww chronic)**	**<5.0 - 14.0**	**3 of 3 samples** **3 of 3 events**	**Impaired**	
			Turbidity (former standard) **NTU**	**50** **(A&Ww)**	**0.3 - 180**	**2 of 19**	**Attaining**	
Pinto Creek, West Fork headwaters - Pinto Creek AZ15060103-066 A&We, PBC (tributary rule)	ADEQ TMDL Program SRWPN000.01	2001 - 1 field + copper						
	Summary Row **A&We Inconclusive** **PBC Inconclusive**	**2001** **1 sampling event**	**No exceedances**				**Not assessed**	**Insufficient monitoring data to assess.**
Reservation Creek headwaters - Black River AZ15060101-010 A&Wc, FC, FBC, AgL	ADEQ Biocriteria Program Above Black River SRRES000.30 100629	1998 - 1 partial suite	No exceedances					Lab reporting limits for dissolved cadmium and copper samples were too high to use results for assessment.
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998** **1 sampling event**	**No exceedances**				**Not assessed**	**Insufficient monitoring data to assess.**
Rye Creek headwaters - Tonto Creek ~~AZ15060105-014~~ A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring 100 meters above bridge ~~SRRYE000.97~~ 101297	2002 - 4 full suites	Dissolved oxygen mg/L	6.0 (90% saturation) ~~(A&Ww)~~	2.72 - 7.42 (34.9 - ~~78.2%~~)	2 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling and ~~low flow conditions, and not~~ anthropogenic causes. Not considered in final assessment.
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Inconclusive** **AgL Attaining**	**2002** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameter: *Escherichia coli*.**
Salt River Pinal Creek - Roosevelt Lake AZ15060103-004 A&Ww, FC, FBC, AgI, AgL ***(Before Rodeo-Chediski Wildfire)***	USGS Fixed Station #09498500 Above Roosevelt Lake SRSLR055.31 100745	1998 - 3 full + 5 partial suites 1999 - 5 full + 1 partial suite 2000 - 3 full + 1 partial suite 2001 - 3 full + 1 partial suite **2002 - 2 full suite**	Nitrogen (total) mg/L	2.0 (A&Ww)	0.63 - 2.1	1 of 4		
			Turbidity (former standard) NTU	50 (A&Ww)	0.57 - 180	3 of 20		

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	(Before wildfire) Summary Row A&Ww Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining	1998 - June 2002 24 samples 24 sampling events	Nitrogen (total) mg/L	2.0 (A&Ww)	0.63 - 2.1	1 of 4	Inconclusive	After wildfire data and final assessment indicated below.
			Turbidity (former standard) NTU	50 (A&Ww)	0.57 - 180	3 of 20	Attaining	
(After Rodeo-Chediski Wildfire)	USGS Fixed Station #09498500 Above Roosevelt Lake SRSLR055.31 100745	2002 - 5 full + 3 partial suites	Arsenic (total) µg/L	50) (FBC)	9 - 127	2 exceed July-Aug 5 attaining after		
			Chromium (total) µg/L	100 (FBC)	<1 - 168	2 exceed July-Aug 4 attaining after		
			Cyanide (total) µg/L	41 (A&Ww acute)	<10 - 120	2 exceed July-Aug 4 attaining after		
				9.7 (A&Ww chronic)	<10 - 120	2 exceed July-Aug 4 attaining after		
			Dissolved Oxygen mg/L	6.0 (A&Ww)	0.1 - 10.3	2 exceed July-Aug 6 attaining after		
			Escherichia coli CFU/100ml	235 (FBC)	18 - 2700	1 exceed July 1 attaining after		
			Lead (total) µg/L	15 (FBC)	<2 - 688	2 exceed July-Aug 4 attaining after		
				100 (AgL)	<2 - 688	2 exceed July-Aug 4 attaining after		
			Manganese (total) µg/L	10,000 (AgI)	20 - 37800	2 exceed July-Aug 5 attaining after		
			Nitrogen (total) mg/L	2.0 (A&Ww)	2.4 - 220	4 exceed July-Sept 1 attaining after		
			Phosphorus (total) mg/L	1.0 (A&Ww)	0.11 - 39	2 exceed July-Aug 4 attaining after		
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<1 - 3	1 exceed July 5 attaining after		
			Suspended Sediment Conc. mg/L	80 (A&Ww geo mean)	101 - 19900	Geo mean: 2002 = 806		Maximum base flow was calculated to be 1480 cfs based on 30 years of flow data.
			Turbidity (former standard) NTU	50 (A&Ww)	2.8 - 51000	5 exceed July-Sept 2 attaining after		
	Univ. of Az Reservoir Study Salt 1 - Above Roosevelt Lake SRSLR055.23	2002 - 2 suites	Turbidity (former standard) NTU	50 (A&Ww)	5.43 - 3000	1 of 2		

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	(After Wildfire) **Summary Row** A&Ww Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining	After June 2002 10 samples 8 sampling events	Arsenic (total) µg/L	50) (FBC)	9 - 127	2 exceed July-Aug 6 attaining after	Attaining (see comment)	USGS & Univ. of Arizona collected 10 samples at 2 sites after the Rodeo-Chediski Wildfire in June 2002. Many parameters exceeded standards immediately after the Rodeo-Chediski Fire. Arizona's Impaired Water identification rule indicates that listings should be restricted to parameters where exceedances are persistent, recurring, or seasonal. Sufficient samples have been collected to show that most impairment due to the fire was temporary and therefore not subject to listing. Arizona has been experiencing a significant drought. Routine sampling will continue in this area to determine if there are residual impacts from the fire when precipitation occurs. Reach assessed as "attaining some uses" and placed on the Planning List due to: 1. Insufficient *Escherichia coli* and nitrogen samples following the fire, 2. 35C geometric mean standard exceedance following the wildfire.
			Chromium (total) µg/L	100 (FBC)	<1 - 168	2 exceed July-Aug 5 attaining after	Attaining (see comment)	
			Cyanide (total) µg/L	41 (A&Ww acute)	<10 - 120	2 exceed July-Aug 4 attaining after	Attaining (see comment)	
				5.7 (A&Ww chronic)	<10 - 120	2 exceed July-Aug 4 attaining after	Attaining (see comment)	
			Dissolved Oxygen mg/L	6.0 (A&Ww)	0.1 - 12.7	2 exceed July-Aug 8 attaining after	Attaining (see comment)	
			Escherichia coli CFU/100ml	235 (FBC)	18 - 2700	1 exceed July 1 attaining after	Inconclusive	
			Lead (total) µg/L	15 (FBC)	1 - 688	2 exceed July-Aug 6 attaining after	Attaining (see comment)	
				100 (AgL)	1 - 688	2 exceed July-Aug 6 attaining after	Attaining (see comment)	
			Manganese (total) µg/L	10,000 (AgI)	20 - 37000	2 exceed July-Aug 6 attaining after	Attaining (see comment)	
			Nitrogen (total) mg/L	2.0 (A&Ww)	2.4 - 220	4 exceed July-Sept 1 attaining after	Inconclusive	
			Phosphorus (total) mg/L	1.0 (A&Ww)	0.11 - 39	2 exceed July-Aug 4 attaining after	Attaining (see comment)	
			Selenium (total) µg/L	2.0 (A&Ww chronic)	<1 - 3	1 exceed July 5 attaining after	Attaining (see comment)	
			Suspended Sediment Conc. mg/L	80 (geometric mean) (A&Ww)	101 - 19,900	1 of 1 annual geo. mean	Inconclusive	
			Turbidity (former standard) NTU	50 (A&Ww)	2.8 - 51,000	5 exceed July-Sept 2 attaining after	Attaining (see comment)	

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STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Salt River Roosevelt Lake - Apache Lake AZ15060106A-024 A&Wc, FC, FBC, DWS, AgI, AgL	Univ. of Az. Reservoir Study Salt 2 Below Roosevelt Lake SRSLR031.45	2002 - 1 Field	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**2002** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**
Salt River Stewart Mountain Dam - Verde River AZ15060106A-003 A&Wc, FC, FBC, DWS, AgI, AgL	SRP Ambient Monitoring Below Stewart Mtn. Dam SRSLR031.94	1998 - 12 partial suites 1999 - 12 partial suites 2000 - 14 partial suites 2001 - 11 partial suites 2002 - 12 partial suites	Copper (dissolved) µg/L	varies by hardness (A&Ww acute)	<10 - 26	3 of 62 (All in 1999)		Lab reporting limits for 55 additional total selenium samples were too high to use results for assessment.
				varies by hardness (A&Ww chronic)	<10 - 26	3 of 62 (All in 1999)		
	USFS 319(h) Project Site 1 - Saguaro Lake Ranch SRSLR031.69	2001 - 9 *Escherichia coli* 2002 - 10 *Escherichia coli*	No exceedances					
	AGFD Routine Monitoring Below Stewart Mt. Dam SRSLR031.66	1999 - 1 field + nutrients 2000 - 1 field + nutrients	No exceedances					
	USFS 319(h) Project Site 2 - Blue Point Bridge SRSLR030.28	2001 - 9 *Escherichia coli* 2002 - 10 *Escherichia coli*	No exceedances					
	USGS Fixed Station Site #09502000 Below Stewart Mt. Dam SRSLR030.22	1999 - 3 full suites 2000 - 6 full suites 2001 - 5 full suites 2002 - 4 full suites	Dissolved oxygen mg/L	> 7.0 (A&Wc)	4.1 - 12	6 of 18		
	USFS 319(h) Project Site 3 - Bus stop 4 SRSLR028.62	2001 - 9 *Escherichia coli* 2002 - 10 *Escherichia coli*	No exceedances					
	USGS Ambient Monitoring Near Coon Bluff SRSLR027.59	1999 - 1 full suite	No exceedances					
	Univ. of Az. Reservoir Study Salt 3 - Above Verde River SRSLR027.28	2002 - 1 field	No exceedances					
	USFS 319(h) Project Site 4 - Phon-D-Sutton Above Verde River SRSLR027.06	2001 - 9 *Escherichia coli* 2002 - 10 *Escherichia coli*	*Escherichia coli* CFU/100 ml	235 (FBC)	<2 - 300	2 of 19		

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Wc Impaired** **FC Attaining** **FBC Inconclusive** **DWS Attaining** **Agl Attaining** **AgL Attaining**	**1998 - 2002** **147 samples** **102 sampling events**	**Copper (dissolved) µg/L**	**varies by hardness (A&Wc acute)**	**<1 - 26**	**3 of 81 events (not exceeded in last 3 years)**	**Attaining**	**Multiple agencies collected a total of 147 samples at 9 sites in 1998 - 2002. Assessed as "impaired" due to copper exceedances and low dissolved oxygen.** **ADEQ assessed the FBC designated use as "inconclusive" rather than "impaired" for the following reasons:** **1. One of the two *E. coli* exceedances was very close to the standard (result is 240, standard is 235).** **2. The bacterial lab method provides an estimate of bacterial density (see discussion in Chapter III).** **3. The two exceedances represent a small proportion of the total number of samples on this reach (2 of 96 samples, 2 of 40 events).**
				varies by hardness (A&Wc chronic)	**<1 - 26**	**3 of 81 samples 3 of 61 events**	**Impaired**	
			Dissolved oxygen mg/L	**> 7.0 (A&Wc)**	**4.1 - 15.7**	**6 of 21**	**Impaired**	
			***Escherichia coli* CFU/100ml**	**235 (FBC)**	**1 - 300**	**2 of 96 samples 2 of 40 events (in 2001 and 2002)**	**Inconclusive (see comment)**	
Snake Creek headwaters - Black River AZ15060101-045 A&Wc, FC, FBC, AgL Unique Water	ADEQ Biocriteria Program Near Bear Wallow Wilderness SRSNK001.19 100643	1998 - 1 partial suite	No exceedances					Lab reporting limits for dissolved copper were too high to use results for assessment.
	ADEQ Ambient Monitoring Above Black River SRSNK000.84 101298	2001 - 1 full suite 2002 - 1 full suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998-2002** **3 sampling events**	**No exceedances**					**ADEQ collected 3 samples at 2 sites in 1998-2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: *Escherichia coli*, dissolved metals (copper and zinc), and total metals (mercury, copper and lead).**
Spring Creek headwaters -Tonto Creek AZ15060105-010 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring West of Young SRSPI006.79 100380	2001 - 1 partial suite 2002 - 2 full + 1 partial suites	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Inconclusive** **AgL Attaining**	**2001 - 2002** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 2001-2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameter: *Escherichia coli*.**
Stinky Creek Fort Apache Reservation - West Fork Black River AZ15060101-352A A&Wc, FC, FBC, AgL Unique Water	ADEQ Biocriteria Program Downstream of Road #116 SRSTI001.78 100652	1998 - 1 partial suite	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.54 (83%)	1 of 1		Lab reporting limits for dissolved cadmium, copper, and zinc were too high to use results for assessment. Low dissolved oxygen due to naturally occurring low flow conditions and pooling, and not anthropogenic causes. Not considered in final assessment.
	ADEQ Ambient Above West Fork Black River SRSTI000.25 101303	2001 - 1 full suite 2002 - 1 partial suite	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.52 - 8.15 (80.8 - 84.4%)	1 of 2		

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STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998 - 2002** **3 sampling events**	**No exceedances**					**ADEQ collected 3 samples at 2 sites in 1998-2002. Assessed as "Inconclusive" due to missing core parameters: *Escherichia coli*, dissolved metals (copper, cadmium, and zinc), and total metals (mercury, copper and lead).**
Tonto Creek headwaters - unnamed tributary at 34 18'10"/111 04'14" AZ15060105-013A A&Wc, FC, FBC, AgI, AgL	ADEQ TMDL Program At headwater spring, Above AGFD Fish Hatchery SRTON073.00 101016	2000 - 3 partial suites 2002 - 6 field + nutrients	No exceedances					
	ADEQ Ambient Monitoring At headwater spring, Below hatchery monitoring point SRTON043.98 100350	1999 - 1 nutrients	No exceedances					
	ADEQ TMDL Program Below AGFD Fish Hatchery Outfall SRTON072.66 101017	2000 - 3 partial suites 2002 - 6 field + nutrients	Nitrogen mg/L	0.5 annual mean (A&Wc)	0.29 - 0.74 (0.64 annual mean)	1 of 1 year (2002)		
	ADEQ Ambient Monitoring Below AGFD Fish Hatchery, North of Kohl's Ranch SRTON043.52 100351	1999 - 1 nutrients 2001 - 1 full suite 2002 - 3 full suites	No exceedances					
	ADEQ TMDL Program Above Baptist Camp and Dick Williams Creek SRTON071.72 101018	2000 - 3 field partial suites 2002 - 6 field + nutrients	No exceedances					
	ADEQ TMDL Program Below Baptist Camp road SRTON070.86 101019	2000 - 3 field, nutrients, + Escherichia coli 2002 - 6 field + nutrients	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.7 - 9.1 (89 - 113%)	1 of 9		
	ADEQ TMDL Program Above Horton Creek SRTON069.87 101020	2000 - 3 partial suites 2002 - 6 field + nutrients	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.4 - 17.1 (86 - 166%)	2 of 9		
			Escherichia coli CFU/100ml	235 (FBC)	12 - 659	1 of 3		
	ADEQ TMDL Program Below Horton Creek SRTON069.80 101021	2000 - 3 partial suites 2002 - 6 field + nutrients	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.5 - 10.3 (86 - 104%)	1 of 9		
			Escherichia coli CFU/100ml	235 (FBC)	33 - 436	1 of 3		
	ADEQ TMDL Program Above USGS gage site SRTON068.97 101629	2000 - 2 *Escherichia coli*	No exceedances					

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ TMDL Program Above Highway 260, USGS gage site SRTON068.95 101022	2000 - 3 partial suites 2002 - 6 field + nutrients	Turbidity (former standard) NTU	10 (A&Wc)	3.42 - 172	3 of 9		
	ADEQ TMDL Program Below Kohls Ranch, Above Tontozona SRTON068.00 101023	2000 - 3 partial suites 2002 - 6 field + nutrients	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	4.9 - 7.8 (60 - 105%)	6 of 9		
			Turbidity (former standard) NTU	10 (A&Wc)	3.3 - 249	3 of 9		
	ADEQ TMDL Program Above Christopher Creek SRTON066.90 101024	2000 - 3 partial suites 2002 - 6 field + nutrients	Turbidity (former standard) NTU	10 (A&Wc)	7.9 - 193	5 of 9		
	ADEQ Fixed Station Below Christopher Creek SRTON038.81 100360	1999 - 3 full suites 2000 - 3 full suites 2001 - 5 full suites 2002 - 4 full suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.3 - 11.6 (77 - 103%)	1 of 14		
			Turbidity (former standard) NTU	10 (A&Wc)	1.4 - 71.8	8 of 14		
	Summary Row A&Wc Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining	1999 - 2002 103 samples 15 sampling events	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	4.9 - 17.1 (60 - 166%)	11 of 99	Attaining	ADEQ collected 103 samples at 13 sites in 1999-2002. Assessed as "attaining some uses" and placed on the Planning List due to *Escherichia coli* and nitrogen exceedances. Also placed on the Planning List due to exceedances of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.
			Escherichia coli CFU/100ml	235 (FBC)	<1 - 859	1 of 15 events (in 2000)	Inconclusive	
			Nitrogen mg/L	0.5 annual mean (A&Wc)	0.29 - 0.74 (0.54 annual mean)	1 of 1 annual mean (2002)	Inconclusive	
			Turbidity (former standard) NTU	10 (A&Wc)	1.3 - 249	19 of 99 (19 of 41 below USGS gage)	Inconclusive	
Tonto Creek unnamed tributary at 34 18'10"/111 04'14" to Haigler Creek AZ15060105-013B A&Ww, FC, FBC, AgI, AgL	ADEQ TMDL Program Above Bear Flats SRTON065.38 101025	2000 - 3 partial suites 2002 - 6 field + nutrients	*Escherichia coli* CFU/100ml	235 (FBC)	1 - 344	2 of 3		1 *Escherichia coli* exceedance was related to a storm
			Nitrogen mg/L	2.0 (A&Ww)	0.21 - 2.8	1 of 9		
				0.5 annual mean (A&Ww)	0.21 - 2.8 0.56 annual mean	1 of 1 year (2002)		
			Turbidity (former standard) NTU	50 (A&Ww)	16 - 898	3 of 9		
	ADEQ Ambient Monitoring Above Bear Flats, South of Kohls Ranch SRTON038.32 100357	2002 - 1 metals suite	No exceedances					Dissolved metals could not be assessed due to lack of water hardness data. Only total metal results were assessed.

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ TMDL Program Below Bear Flats access road SRTON064.22 101026	2000 - 3 partial suites 2002 - 6 field + nutrients	*Escherichia coli* CFU/100ml	235 (FBC)	5 - 525	2 of 3		
			Turbidity (former standard) NTU	50 (A&Ww)	19.1 - 119	3 of 9		
	ADEQ Ambient Monitoring Below Bear Flats, south of Kohls Ranch SRTON037.17 100358	2001 - 1 full suite 2002 - 3 full suites	Turbidity (former standard) NTU	50 (A&Ww)	2.4 - 62.7	1 of 4		
	Summary Row A&Ww Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining	**2000 - 2002** **23 samples** **13 sampling events**	***Escherichia coli*** **CFU/100ml**	**235** **(FBC)**	**1 - 525**	**3 of 7 samples** **2 of 7 events** **(in 2000)**	**Inconclusive** **(see comment)**	**ADEQ collected 23 samples at 4 sites in 2000 - 2002. Assessed as "attaining some uses" and placed on the Planning list due to exceedances of the nitrogen annual mean and the *Escherichia coli* standard.** **ADEQ assessed the FBC designated use as "inconclusive" (rather than impaired) for the following reasons:** **1. One of the two *Escherichia coli* exceedances was very close to the standard (result is 272, standard is 235).** **2. The bacterial lab method provides an estimate of bacterial density (see discussion in Chapter III).** **Also placed on the Planning List due to exceedances of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
			Nitrogen **mg/L**	**2.0** **(A&Ww)**	**0.21 - 2.8**	**1 of 20**	**Attaining**	
				0.5 **annual mean** **(A&Ww)**	**0.21 - 2.8** **(0.56** **annual** **mean)**	**1 of 1 year** **(in 2002)**	**Inconclusive**	
			Turbidity (former standard) **NTU**	**50** **(A&Ww)**	**2.4 - 698**	**7 of 21**	**Inconclusive** **(see comment)**	
Tonto Creek Rye Creek - Gun Creek AZ15060105-008 A&Ww, FC, FBC, AgI, AgL	ADEQ Fixed Station Above USGS gage Near Jakes Corner SRTON015.88 100349	1998 - 4 full suites 1999 - 3 full suites 2000 - 3 full suites 2001 - 5 full suites 2002 - 2 partial + 1 full suite	No exceedances					
	Summary Row A&Ww Attaining FC Attaining FBC Attaining AgI Attaining AgL Attaining	**1998 - 2002** **18 sampling events**	**No exceedances**					**ADEQ collected 18 samples in 1998-2002. Assessed as "attaining all uses."**

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STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
LAKE MONITORING DATA								
Apache Lake AZL15060106A-0070 A&Wc, FC, FBC, DWS, AgI, AgL	AGFD Routine Monitoring SRAPA - A1 (site A1)	2001- 4 field + nutrients	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	2.3 - 8.9	2 of 4		Some nitrogen and phosphorus samples were obtained, but were not composite samples at 1, 2 & 5 meters depth as required for nutrient standards for this lake (R18-11-109.G Footnote 8). Therefore, these nutrient samples were not considered in the final assessment and do not count as core parameter samples.
	AGFD Routine Monitoring SRAPA - A2 (site A2)	2001- 5 field + nutrients	No exceedances					
	AGFD Routine Monitoring SRAPA - A3 (site A3)	2001- 5 field + nutrients	No exceedances					
	AGFD Routine Monitoring SRAPA - BC (Burnt Corral)	1999 - 4 partial suites	No exceedances					
	AGFD Routine Monitoring SRAPA - A (dam site)	1999 - 4 partial suites	No exceedances					
	AGFD Routine Monitoring SRAPA - TR (Turtle Rock)	1999 - 3 partial suites	No exceedances					
	AGFD Urban Lakes Study SRAPA - A (deepest)	2002 - 2 partial suites	No exceedances					
	AGFD Urban Lakes Study SRAPA - B (mid lake)	2002 - 1 partial suites	No exceedances					
	AGFD Urban Lakes Study SRAPA (Site C)	2002 - 1 field	No exceedances					
	Univ. of Az. Reservoir Study SRAPA - A (Site A)	1999 - 4 partial suites 2000 - 8 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.7 - 10.7 (87 - 120%)	1 of 4		
			pH (high) SU	6.5 - 9.0 (A&Wc, FBC, AgL AgL, DWS)	7.8 - 9.3	1 of 12		
	Univ. of Az. Reservoir Study SRAPA - B (Site B)	1999 - 4 partial suites 2000 - 8 partial suites	No exceedances					
	Univ. of Az. Reservoir Study SRAPA - C (Site C)	1999 - 4 field 2000 - 8 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	1.2 - 8.9 (12 - 84%)	4 of 5		
	ADEQ Lakes Program SRAPA - A (deepest) 100997	2000 - 1 suite 2001 - 1 field + VOCs	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.0 - 15.5 (60 - 182%)	1 of 2		Field staff documented recent lake turnover which caused the low dissolved oxygen and not anthropogenic causes. Therefore, this naturally occurring low dissolved oxygen was not included in the final assessment.
	ADEQ Lakes Program SRAPA-MAR (marina) 100998	2000 - 1 suite 2001 - 1 field + VOCs	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.6 - 14.8 (79 - 182%)	1 of 2		
	ADEQ Lakes Program SRAPA-E 100008	2000 - 1 suite	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.4 (77%)	1 of 1		
	Summary Row A&Wc Inconclusive FC Attaining FBC Inconclusive DWS Inconclusive AgI Attaining AgL Attaining	**1998 - 2002** 70 samples 24 sampling events	**Dissolved oxygen** mg/L	> 7.0 (90% saturation) (A&Wc)	1.1 - 15.5 (12-120%)	7 of 45	Inconclusive	**Univ. of Arizona's Reservoir Monitoring Project, AGFD, and ADEQ collected a total of 70 samples during 24 sampling events in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to low dissolved oxygen and missing core parameters: *Escherichia coli*, phosphorus, nitrogen, and fluoride.**
			pH (high) SU	6.5 - 9.0 (A&Wc, FBC, DWS, AgL, AgI)	7.4 - 9.3	1 of 70	Attaining	
Big Lake AZL15060101-0160 A&Wc, FC, FBC, DWS, AgI, AgL	ADEQ Lakes Program SRBIG - A (dam site) 101322	2001 - 1 partial suite	No exceedances					
	ADEQ Lakes Program SRBIG - B (Mid lake) 101355	2002 - 2 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.8 - 10.1 (68 - 85%)	1 of 2		

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			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ Lakes Program SRBIG - D 100013	2002 - 1 field	No exceedances					
	ADEQ Lakes Program SRBIG - SH (shoreline) 101358	2002 - 1 *Escherichia coli*	No exceedances					
	ADEQ Lakes Program SRBIG - SBR (west of floating dock) 101359	2002 - 1 *Escherichia coli*	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Inconclusive** **DWS Attaining** **AgI Attaining** **AgL Attaining**	**2001 - 2002** **6 total samples** **3 sampling events**	**Dissolved oxygen** **mg/L**	**> 7.0** **(90% saturation)** **(A&Wc)**	**6.6 - 10.6**	**1 of 4**	**Inconclusive**	**ADEQ collected 6 samples during 3 sampling events in 2001-2002. Assessed as "attaining some uses" and added to the Planning List due to low dissolved oxygen and missing core parameters: *Escherichia coli* and dissolved cadmium.**
Canyon Lake AZL15060106A-0250 A&Wc, FC, FBC, DWS, AgI, AgL	Univ. of Az. Reservoir Study SRCAN - A (deepest)	1999 - 4 partial suites 2000 - 8 partial suites	No exceedances					Some nitrogen and phosphorus samples were obtained, but were not composite samples at 1, 2 & 5 meters depth as required for nutrient standards for this lake (R18-11-109.G Footnote 6). Therefore, these nutrient samples were not considered in the final assessment and do not count as core parameter samples.
	Univ. of Az. Reservoir Study SRCAN - B (mid lake)	1999 - 4 partial suites 2000 - 8 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.7 - 10.7 (87 - 100%)	1 of 7		
	Univ. of Az. Reservoir Study SRCAN - C (site C)	1999 - 4 partial suites 2000 - 8 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	2.1 - 9.8 (24 - 89%)	3 of 5		
	AGFD Urban Lakes Program SRCAN - A (site A)	2002 - 2 partial suites	Ammonia mg/L	varies by pH & temperature (A&Wc chronic)	0.07 - 0.47	1 of 2		
	AGFD Urban Lakes Program SRCAN - B (site B)	2002 - 2 partial suites	No exceedances					
	AGFD Routine Monitoring SRCAN - C1 (site C1)	2001 - 5 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	2.2 - 8.5	2 of 5		
	AGFD Routine Monitoring SRCAN - C2 (site C2)	2001 - 5 partial suites	No exceedances					
	AGFD Routine Monitoring SRCAN - C3 (site C3)	2001 - 5 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.7 - 10.2	1 of 5		
	AGFD Routine Monitoring SRCAN - Mid Basin	1998 - 1 partial suite	No exceedances					
	AGFD Routine Monitoring SRCAN - Up Lake	1998 - 1 partial suite	No exceedances					
	Summary Row **A&Wc Impaired** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**1999-2000** **49 samples** **20 sampling events**	**Ammonia** **mg/L**	**varies by pH &** **temperature** **(A&Wc chronic)**	**0.1 - 0.47**	**1 of 44** **1 of 20 events**	**Inconclusive**	**Univ. of Arizona's Reservoir Monitoring Project and AGFD collected 49 samples during 20 sampling events in 1998-2002. Assessed as "impaired" due to low dissolved oxygen.**
			Dissolved oxygen **mg/L**	**> 7.0** **(90% saturation)** **(A&Wc)**	**2.2 - 10.7**	**7 of 35**	**Impaired**	**Also on the Planning List due to ammonia exceedance and missing core parameters: *Escherichia coli*, total fluoride, total boron, nitrate, nitrogen, phosphorus, total metals (mercury, arsenic, chromium, lead, and copper), and dissolved metals (copper, cadmium, and zinc).**
Crescent Lake AZL15060101-0420 A&Wc, FC, FBC, AgI, AgL	ADEQ Lakes Program SRCRE - B (mid lake) 100993	1999 - 1 partial suite 2001 - 1 partial suite 2002 - 2 full suites	pH (high) SU	6.5 - 9.0 (A&Wc, FBC, AgL, AgI)	7.8 - 9.8	2 of 4		Lab reporting limits for copper and cadmium were too high to use results for assessment.

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			Nitrogen mg/L	2.0 (A&Wc)	1.56 - 2.05	1 of 4		
	ADEQ Lakes Program SRCRE - BR (boat ramp) 101320	2002 - 2 Escherichia coli (same date as at B)	No exceedances					
	AGFD Lakes Program SRCRE - Mid Lake 101320	1998 - 2 partial suite 2001 - 1 partial suite	No exceedances					
	AGFD Lakes Program SRCRE - Dam Site 101320	1998 - 2 partial suite	pH (high) SU	6.5 - 9.0 (A&Wc, FBC, Agl, AgL)	8.5 - 9.6	1 of 2		
	Summary Row A&Wc Impaired FC Attaining FBC Impaired Agl Impaired AgL Impaired	**1998 - 2002** **11 samples** **8 sampling events**	**pH (high) SU**	**6.5 - 9.0 (A&Wc, FBC, Agl, AgL)**	**7.6 - 9.6**	**3 of 9**	**Inconclusive (Impaired*)**	**ADEQ and AGFD collected 11 samples during from 4 sites in 1998-2002. Assessed as "impaired" due to pH exceedances.** ***EPA placed this reach on the 2002 303(d) List due to pH exceedances in 3 of 7 samples. Once listed, the surface water cannot be delisted until a TMDL is complete or data indicate that designated uses are being attained.** **On the Planning List due to:** **1. Total nitrogen exceedances,** **2. Missing core parameters: *Escherichia coli*, turbidity, and dissolved metals (copper and cadmium)** **3. Recurrent fish kills, the most recent occurring in 1996. Fish kills may be evidence of a narrative standard violation.**
			Nitrogen (total) mg/L	**2.0 (A&Wc)**	**1.88 - 2.05**	**1 of 9**	**Inconclusive**	
Roosevelt Lake AZL15060103-1240 A&Ww, FC, FBC, DWS, Agl, AgL ***(Before Rodeo-Chediski Wildfire)***	Univ. of Az. Reservoir Study SRROO - A (deepest)	1999 - 4 partial suites 2000 - 8 partial suites	Dissolved oxygen mg/L	6.0 (90% saturation) (A&Ww)	4.9 - 10.5	1 of 4		Some nitrogen and phosphorus samples were obtained, but were not composite samples at 1, 2 & 5 meters depth as required for nutrient standards for this lake (R18-11-109.G Footnote 6). Therefore, these nutrient samples were not considered in the final assessment and do not count as core parameter samples.
	Univ. of Az. Reservoir Study SRROO - B (mid lake)	1999 - 4 partial suites 2000 - 6 partial suites	Turbidity (former standard) NTU	25 (A&Ww)	2.1 - 112	5 of 10		
	Univ. of Az. Reservoir Study SRROO - B2	1999 - 4 partial suites 2000 - 8 partial suites	Turbidity (former standard) NTU	25 (A&Ww)	2.0 - 83	4 of 12		
	Univ. of Az. Reservoir Study SRROO - C	2000 - 1 partial suite	Turbidity (former standard) NTU	25 (A&Ww)	44.7	1 of 1		
	Univ. of Az. Reservoir Study SRROO - C2	1999 - 1 partial suite	No exceedances					
	AGFD Urban Lakes Program SRROO - A (deepest)	2002 - 2 partial suites	Manganese (total) µg/L	960 (DWS)	220 - 1040	1 of 2		
	AGFD Urban Lakes Program SRROO - B (mid lake)	2002 - 2 partial suites	Turbidity (former standard) NTU	25 (A&Ww)	10.9 - 40.8	1 of 2		
	AGFD Urban Lakes Program SRROO - C	2002 - 2 partial suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	4.2 - 11.3	1 of 2		
	AGFD Routine Monitoring SRROO (Windy Hill site)	2000 - 5 partial suites 2002 - 1 partial suite	No exceedances					

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	AGFD Routine Monitoring Between Hill & Dam SRROO	2002 - 1 partial suite	Copper (total) µg/L	500 (AgL)	715	1 of 1		
	AGFD Routine Monitoring SRROO (R3 site)	2001 - 5 partial suites	No exceedances					
	AGFD Routine Monitoring SRROO (Salt River arm)	2000 - 8 partial suites 2001 - 3 partial suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	5.6 - 13.2	1 of 12		
	AGFD Routine Monitoring SRROO (dam site)	2000 - 10 partial suites 2001 - 4 partial suites 2002 - 2 partial suites	No exceedances					
	AGFD Routine Monitoring SRROO (Tonto Creek arm)	2000 - 9 partial suites 2001 - 3 partial suites 2002 - 1 partial suite	No exceedances					
	ADEQ Clean Lakes Program SRROO - A (deepest) 100075	2000 - 1 partial suite 2001 - 1 partial suite	No exceedances					
	ADEQ Clean Lakes Program SRROO - B (mid lake) 100076	2000 - 1 partial suite	No exceedances					
	ADEQ Clean Lakes Program SRROO - C 100077	2000 - 1 partial suite 2001 - 1 partial suite	No exceedances					
	(Before Rodeo-Chediski Fire) **Summary Row** **A&Ww Inconclusive** **FC Attaining** **FBC Inconclusive** **DWS Attaining** **AgI Attaining** **AgL Attaining**	**1999 - 2002** **95 samples** **30 sampling events** **Final assessment**	**Copper (total) µg/L**	**500 (AgL)**	**5 - 715**	**1 of 21**	**Attaining**	**Univ. of Arizona Reservoir Monitoring Project, ADEQ, & AGFD collected a total of 95 samples at 17 sites in 1998 - 2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters and exceedances of the former turbidity standard.** **Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.** **Missing core parameters: *Escherichia coli*, total nitrogen, and total phosphorus.**
			Dissolved oxygen mg/L	**> 6.0 (90% saturation) (A&Ww)**	**4.2 - 12.4**	**3 of 78**	**Attaining**	
			Manganese (total) µg/L	**980 (DWS)**	**5 - 1040**	**1 of 47**	**Attaining**	
			Turbidity (former standard) NTU	**25 (A&Ww)**	**0.05 - 112**	**11 of 46**	**Inconclusive (see comment)**	
Roosevelt Lake AZL15060103-1240 A&Ww, FC, FBC, DWS, AgI, AgL ***(After Rodeo-Chediski Wildfire)***	AGFD Routine Monitoring Salt Arm Inflow/Salt Mouth SRROO - AGFD	2002 - 2 suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	5.4	1 of 1		These AGFD samples were assessed separately to show the impacts of the Rodeo-Chediski Wildfire in June 2002 on Roosevelt Lake. Two samples were obtained after the fire, July 19, 2002 and October 8, 2002. Exceedances occurred only in the July sampling event.
			Lead (total) µg/L	15 (FBC, DWS)	<10 - 35	1 of 2		
			Manganese (total) µg/L	98 (DWS)	84 - 1680	1 of 2		
			Nitrogen (total) mg/L	1.00 (A&Ww)	0.58 - 5.31	1 of 2		
			Phosphorus (total) mg/L	0.6 (A&Ww)	0.10 - 1.67	1 of 2		

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row (Post Rodeo-Chediski Fire)	**July & October 2002 2 total samples 2 sample events (After Rodeo-Chediski Wildfire in June 2002. Not used in assessment. See comments.)**	**Dissolved oxygen mg/L**	**> 6.0 (90% saturation) (A&Ww)**	**5.4**	**1 of 1**	**Not assessed (see comment)**	**AGFD collected 2 samples after the Rodeo-Chediski Wildfire near the Salt River mouth to Roosevelt Lake. Several parameters exceeded standards immediately after the Rodeo-Chediski Fire. Arizona's Impaired Water Identification rule indicates that listings should be restricted to parameters where exceedances are persistent, recurring, or seasonal. Sufficient samples have been collected in the Salt River above the Lake (see Salt River monitoring) to show that most impairment due to the fire was temporary and therefore not subject to listing. Roosevelt Lake will remain on the Planning List for more monitoring to determine whether there are any residual impacts due to the fire. Note that no turbidity or SSC samples were taken following the fire.**
			Lead (total) µg/L	**15 (FBC, DWS)**	**<10 - 35**	**1 of 2**	**Not assessed (see comment)**	
			Manganese (total) µg/L	**96 (DWS)**	**84 - 1680**	**1 of 2**	**Not assessed (see comment)**	
			Nitrogen (total) mg/L	**1.00 (A&Ww)**	**0.58 - 5.31**	**1 of 2**	**Not assessed (see comment)**	
			Phosphorus (total) mg/L	**0.5 (A&Ww)**	**0.10 - 1.67**	**1 of 2**	**Not assessed (see comment)**	
Saguaro Lake AZL15060106A-1290 A&Wc, FC, FBC, DWS, AgI, AgL	Univ. of Az. Reservoir Study SRSAG - A	1999 - 4 partial suites 2000 - 8 partial suites	No exceedances					Some nitrogen and phosphorus samples were obtained, but were not composite samples at 1, 2 & 5 meters depth as required for nutrient standards for this lake (R18-11-109.G Footnote 6). Therefore, these nutrient samples were not considered in the final assessment and do not count as core parameter samples.
	Univ. of Az. Reservoir Study SRSAG - B	1999 - 4 partial suites 2000 - 8 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.3 - 10.5	1 of 4		
			pH (high) SU	6.5 - 9.0 (A&Wc, FBC, DWS, AgI, AgL)	7.9 - 9.3	2 of 12		
	Univ. of Az. Reservoir Study SRSAG - C	1999 - 4 field 2000 - 8 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.2 - 11.2	2 of 5		
	AGFD Urban Lakes Study SRSAG - A	2002 - 2 partial suites	No exceedances					
	AGFD Urban Lakes Study SRSAG - B	2002 - 2 partial suites	No exceedances					
	AGFD Routine Monitoring SRSAG - UL (up lake)	1998 - 1 field	No exceedances					
	AGFD Routine Monitoring SRSAG - S1	2001 - 5 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	3.4 - 9.3	1 of 5		
	AGFD Routine Monitoring SRSAG - S2	2001 - 5 partial suites	No exceedances					
	AGFD Routine Monitoring SRSAG - S3	2001 - 5 partial suites	No exceedances					
	AGFD Routine Monitoring SRSAG - A (dam site)	1998 - 1 field 1999 - 10 partial suites	No exceedances					
	AGFD Routine Monitoring SRSAG (Perrigrin Cove)	1998 - 1 field 1999 - 10 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc	6.2 - 10 (76 - 110%)	1 of 10		Low dissolved oxygen attributed to natural lake turnover of the water column in October 1999, a naturally-occurring condition. Not used in the final assessment.

TABLE 15. SALT WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	AGFD Routine Monitoring SRSAG - MF (below Mormon Flat Dam)	1998 - 1 field 1999 - 1 partial suite 2001 - 1 partial suite	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6 - 6 (70 - 103%)	2 of 3		
			pH (high) SU	6.5 - 9.0 (A&Wc, FBC, DWS, Agl, AgL)	8.0 - 9.6	1 of 3		
	AGFD Routine Monitoring Above Bagley Flats SRSAG	1999 - 7 partial suites 2001 - 3 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.1 - 9.9 (73 - 107%)	1 of 11		
	ADEQ Lakes Program SRSAG-BJ 100081	1999 - 1 partial suite 2001 - 4 partial suites 2002 - 1 VOC	Dissolved Oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.0 - 13.5	1 of 4		
			Fluoride (total) µg/L	4000 (DWS)	200 - 15800	1 of 4		
			pH (high) SU	6.5 - 9.0 (A&Wc, FBC, DWS, Agl, AgL)	7.5 - 9.4	2 of 4		
	ADEQ Lakes Program SRSAG-A 100082	1999 - 1 partial suite 2000 - 1 partial suite 2001 - 2 partial suites 2002 - 2 partial suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	5.6 - 11.4	1 of 6		Low dissolved oxygen attributed to natural lake turnover of the water column in October, a naturally-occurring condition. Not used in the final assessment.
	ADEQ Lakes Program At Marina SRSAG-MAR1 100994	2000 - 1 VOC 2001 - 1 Field + 2 VOC	No exceedances					
	ADEQ Lakes Program SRSAG-MAR2 100995	1999 - 1 field 2000 - 1 VOCs	No exceedances					
	ADEQ Lakes Program SRSAG-BAG 101001	1999 - 1 partial suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Inconclusive** **DWS Attaining** **Agl Attaining** **AgL Attaining**	**1998 - 2002** **101 samples** **37 sampling events**	**Dissolved oxygen mg/L**	**> 7.0 (90% saturation) (A&Wc)**	**3.4 - 13.5**	**4 of 82**	**Attaining**	**ADEQ & AGFD collected a total of 101 samples from 18 sites in 1998-2002. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameters: *Escherichia coli*, total nitrogen, and total phosphorus.**
			Fluoride (total) µg/L	**4000 (DWS)**	**200 - 15800**	**1 of 16**	**Attaining**	
			pH (high) SU	**6.5 - 9.0 (A&Wc, FBC, DWS, Agl, AgL)**	**7.5 - 9.6**	**5 of 101**	**Attaining**	

TABLE 16. SALT RIVER WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
SALT WATERSHED -- STREAM ASSESSMENTS				
Bear Wallow Creek North and South Forks - Black River 6 miles AZ15060101-023 Unique Water	A&Wc Inconclusive FC Attaining FBC Inconclusive AgL Attaining Category 2 — Attaining Some Uses	On the Planning List due to missing core parameters: *Escherichia coli* and dissolved copper.		
Bear Wallow Creek, North Fork headwaters - Bear Wallow Creek 5 miles AZ15060101-022 Unique Water	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to missing core parameters: *Escherichia coli*, dissolved metals (copper and zinc), and total metals (mercury, copper, and lead).		
Bear Wallow Creek, South Fork headwaters - Bear Wallow Creek 4 miles AZ15060101-258	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 2 samples).		
Beaver Creek headwaters - Black River 13 miles AZ15060101-008	A&Wc Inconclusive FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 2 — Attaining Some Uses	On the Planning List due to: 1. Missing core parameter: dissolved copper. 2. Exceedance of the former turbidity standard (2 of 8 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.		
Black River Beaver Creek - Reservation Creek 11 miles AZ15060101-007	A&Wc Inconclusive FC Attaining FBC Inconclusive DWS Attaining AgI Attaining AgL Attaining Category 2 — Attaining Some Uses	On the Planning List due to missing core parameters: *Escherichia coli* and dissolved copper.		
Black River, East Fork headwaters - Black River 12 miles AZ15060101-009	A&Wc Inconclusive FC Attaining FBC Attaining DWS Attaining AgI Attaining AgL Attaining Category 2 — Attaining Some Uses	On the Planning List due to missing core parameter: dissolved copper.		
Black River, West Fork headwaters - Black River East Fork 15 miles AZ15060101-048	A&Wc Inconclusive FC Attaining FBC Attaining DWS Attaining AgI Attaining AgL Attaining Category 2 — Attaining Some Uses	On the Planning List due to missing core parameters: dissolved metals (copper, cadmium, and zinc).		
Bloody Tanks Wash Schultz Ranch - Miami Wash 7 miles AZ15060103-034B	A&We Inconclusive PBC Inconclusive Category 3 – Inconclusive	No current monitoring data. Added to the Planning List in 2002 due to copper exceedance (1 of 1 sample). (Previously on the 303(d) List due to copper but delisted in 2002 due to insufficient monitoring data as required in the Impaired Water Identification Rule.)		
Campaign Creek headwaters - Pinto Creek 17 miles AZ15060103-037	A&Ww Attaining FC Attaining FBC Attaining AgL Attaining Category 1 — Attaining All Uses			

TABLE 16. SALT RIVER WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Canyon Creek headwaters - White Mountain Apache Res. 9 miles AZ15060103-014	A&Wc Inconclusive FC Attaining FBC Attaining DWS Attaining AgI Attaining AgL Attaining Category 2 — Attaining Some Uses	On the Planning List due to fish kill in 2002 related to the Rodeo-Chediski Fire. Further monitoring is needed to determine long-term impacts from the fire.		
Cherry Creek tributary at 34 05'09"/110 56'04" - Salt River AZ15060103-015B (Reach was split into coldwater and warmwater segments since the last assessment. No current data in 015A.)	A&Wc Attaining FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 1 — Attaining All Uses			
Christopher Creek headwaters - Tonto Creek 8 miles AZ15060105-353	A&Wc Inconclusive FC Attaining FBC Impaired AgI Attaining AgL Attaining Category 5 – Impaired	On the Planning List due to former turbidity standard exceedances (9 of 54 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.	Add *Escherichia coli* to the 2004 303(d) List due to exceedances in 2 of 7 sampling events (occurred in 2000). Delist turbidity. The turbidity standard was repealed in 2002. Move to the Planning List due to exceedances of the former standard.	EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Coon Creek Unnamed tributary at 33 46'42"/110 54'25" - Salt River 10 miles AZ15060103-039B (Reach was split into coldwater and warmwater segments since the last assessment. No current data in 039A.)	A&Ww Attaining FC Attaining FBC Attaining AgL Attaining Category 1 — Attaining All Uses			
Cottonwood Canyon headwaters - Pinto Creek 2 miles AZ15060103-891	A&We Inconclusive PBC Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 2 samples).		
Deer Creek headwaters - Rye Creek 12 miles AZ15060105-018	A&Wc Attaining FC Attaining FBC Attaining Category 1 – Attaining All Uses			
Fish Creek headwaters - Black River 14 miles AZ15060101-032	A&Ww Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 2 — Attaining Some Uses	On the Planning List due to: 1. Acute and chronic copper exceedance (1 of 1 sampling event). 2. Missing core parameters: *Escherichia coli* and dissolved metals (copper and zinc).		
Gibson Mine tributary headwaters - Pinto Creek 1 mile AZ15060103-887	A&Ww Not attaining FC Inconclusive FBC Inconclusive Category 4A — Not attaining	On the Planning List due to: 1. Phase II TMDL and follow up monitoring for the TMDL. Copper exceeded standards in 5 of 5 sampling events. 3. Low pH (1 of 4 samples). 4. Zinc exceedance (1 of 1 sampling event). 5. Missing core parameters: *Escherichia coli*, dissolved metals (cadmium and zinc), total mercury, and turbidity/SSC.		Copper loading from this tributary was addressed in the Pinto Creek copper TMDL approved by EPA in 2001. ADEQ is currently conducting monitoring for a Phase II TMDL.
Gold Gulch Canyon headwaters - Pinto Creek 4 miles AZ15060103-894	A&We Inconclusive PBC Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		

TABLE 16. SALT RIVER WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Greenback Creek headwaters - Tonto Creek 16 miles AZ15060105-005	A&Ww Attaining FC Attaining FBC Attaining AgL Attaining Category 1 — Attaining All Uses			
Haigler Creek headwaters - unnamed reach at 34 12'23.1"/111 00'11" 15 miles AZ15060105-012A (Reach was split into coldwater and warmwater segments since the last assessment. No current data in 012B.)	A&Wc Attaining FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 1 — Attaining All Uses			
Haunted Canyon headwaters - Pinto Creek 7 miles AZ15060103-879	A&Ww Attaining FC Attaining FBC Attaining Category 1 — Attaining All Uses			
Hay Creek headwaters - West Fork Black River 5 miles AZ15060101-353 Unique Water	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 2 samples).		
Miller Springs Canyon headwaters - Pinto Creek 2 miles AZ15060103-892	A&Ww Inconclusive FBC Inconclusive FC Inconclusive Category 3 – Inconclusive	On the Planning List due to: 1. Selenium exceedances in 4 of 4 samples (some of these results may have been laboratory method providing false positives). 2. Former turbidity standard exceeded in 1 of 8 samples. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring. 3. Missing core parameters: *Escherichia coli*, dissolved oxygen, and total mercury.		
Pinal Creek Jesse Lane - Salt River 6 miles AZ15060103-280D	A&Ww Attaining FC Attaining FBC Attaining AgL Attaining Category 1 – Attaining All Uses			
Pinto Creek headwaters - tributary at 33 19'27"/110 54'56" 3 miles AZ15060103-018A (Reach was split into coldwater and warmwater segments since the last assessment.)	A&Wc Not attaining FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 4A – Not attaining	On the Planning List due to: 1. Copper TMDL follow up monitoring. 2. Insufficient monitoring data to assess (only 2 samples).		Copper TMDL completed by EPA in 2001. ADEQ is collecting data to support a Phase II copper TMDL for this reach.
Pinto Creek tributary at 33 19'27"/110 54'56" - Ripper Spring 16 miles AZ15060103-018B (Reach was split into coldwater and warmwater segments since the last assessment.)	A&Ww Not attaining FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Attaining Category 4A – Not attaining	On the Planning List due to: 1. Chronic selenium exceedances in 6 of 17 samples (some of these results may have been laboratory method providing false positives). 2. Acute and chronic zinc excceedance (1 of 22 sampling events, occurred in 2000). 3. TMDL follow-up monitoring for copper exceedances (9 of 22 sampling events). 4. Missing core parameters: *Escherichia coli*, total boron, and total mercury.		Copper TMDL completed by EPA in 2001. ADEQ is collecting data to support a Phase II copper TMDL for this reach.

TABLE 16. SALT RIVER WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Pinto Creek Ripper Spring - Roosevelt Lake 18 miles AZ15060103-018C (Renumbered reach since last assessment because of split discussed above)	A&Ww Impaired FC Attaining FBC Attaining Agl Attaining AgL Attaining Category 5 — Impaired		Add copper to the 303(d) List for chronic copper exceedances (2 of 24 sampling events). Add selenium to the 303(d) List due to chronic selenium exceedances (3 of 3 sampling events). ADEQ's samples were analyzed using different laboratory methods than BHP's samples in the above reach (see selenium comment above).	
Pinto Creek, West Fork headwaters - Pinto Creek 12 miles AZ15060103-066	A&We Inconclusive PBC Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		Sampled as part of the Pinto Creek copper TMDL. Any loadings from this tributary would be addressed in the Pinto Creek Phase II TMDL.
Reservation Creek headwaters - Black River 3 miles AZ15060101-010	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Rye Creek headwaters - Tonto Creek 18 miles AZ15060105-014	A&Ww Attaining FC Attaining FBC Inconclusive AgL Attaining Category 2 — Attaining Some Uses	On the Planning List due to missing core parameter: *Escherichia coli*.		
Salt River Pinal Creek-Roosevelt Lake 8 miles AZ15060103-004	A&Ww Inconclusive FC Attaining FBC Inconclusive Agl Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. *Escherichia coli* exceedance (immediately after the Rodeo-Chediski Fire). 2. Total nitrogen exceedances (1 of 4 samples before the fire and 4 of 5 after the fire). 3. Suspended sediment concentration annual geometric mean exceedance (1 of 1) occurred immediately after the fire.		
Salt River Roosevelt Lake - Apache Lake 8 miles AZ15060106A-024	A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive Agl Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to insufficient monitoring data to assess (only 1 sample).		
Salt River Stewart Mountain Dam - Verde River 10 miles AZ15060106A-003	A&Wc Impaired FC Attaining FBC Inconclusive DWS Attaining Agl Attaining AgL Attaining Category 5 – Impaired	On the Planning List due to *Escherichia coli* exceedances (2 of 12 sampling events, occurred in 2000)*.	Add copper to the 303(d) List for chronic copper exceedances (3 of 81 sampling events). Add dissolved oxygen to the 303(d) List. Low dissolved oxygen in 6 of 21 samples.	*Although two *Escherichia coli* exceedances, FBC was assessed as "inconclusive" rather than "impaired" for the following reasons: 1. One of the two *Escherichia coli* exceedances was very close to the standard (result is 240, standard is 235) and lab methods provide an estimate of bacterial density (most probable number) (see discussion in Chapter III). 2. The two exceedances represent a small proportion of the total number of samples on this reach (2 of 96 samples, 2 of 40 monitoring events).
Snake Creek headwaters - Black River 6 miles AZ15060101-045 Unique Water	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to missing core parameters: *Escherichia coli*, dissolved metals (copper and zinc), and total metals (mercury, copper and lead).		

TABLE 16. SALT RIVER WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Spring Creek headwaters - Tonto Creek 20 miles AZ15060105-010	A&Ww Attaining FC Attaining FBC Inconclusive AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to missing core parameter: *Escherichia coli*.		
Stinky Creek Fort Apache Reservation - West Fork Black River AZ15060101-352A Unique Water	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive Category 3 — Inconclusive	On the Planning List due to missing core parameters: *Escherichia coli*, dissolved metals (copper, cadmium, and zinc), and total metals (mercury, copper and lead).		
Tonto Creek headwaters - unnamed tributary at 34 18'10"/111 04'14" 8 miles AZ15060105-013A (Reach was split into coldwater and warmwater segments since the last assessment.)	A&Wc Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. *Escherichia coli* exceedance (1 of 15 sampling events, occurred in 2000). 2. Nitrogen annual mean exceedance (in 2002). 3. Exceedances of the former turbidity standard (19 of 99 samples, or 19 of 41 samples below the USGS gage). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.	Delist turbidity. The turbidity standard was repealed in 2002. Add to the Planning List due to exceedances of the former standard.	EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Tonto Creek unnamed tributary at 34 18'10"/111 04'14" - Haigler Creek 9 miles AZ15060105-013B (Reach was split into coldwater and warmwater segments since the last assessment.)	A&Ww Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining Category 2 – Attaining Some Uses	On the Planning List due to: 1. Nitrogen annual mean exceedance in 2002. 2. *Escherichia coli* exceedance (2 of 7 sampling events, occurred in 2000)*. 2. Former turbidity standard exceedances (7 of 21 samples). Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.	Delist turbidity. The turbidity standard was repealed in 2002. Add to the Planning List. The Aquatic and Wildlife use is assessed as "inconclusive" due to exceedances of the former turbidity standard.	*Although two Escherichia coli exceedances occurred, FBC was assessed as "inconclusive" rather than "impaired." One of the two *E. coli* exceedances was very close to the standard (result is 272, standard is 235) and bacterial lab methods provide an estimation of bacterial density (most probable number) (see discussion in Chapter III). EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Tonto Creek Rye Creek - Gun Creek 5 miles AZ15060105-008	A&Ww Attaining FC Attaining FBC Attaining AgI Attaining AgL Attaining Category 1 — Attaining All Uses		Delist turbidity. The standard was repealed in 2002. No exceedances of the former standard in 18 samples.	
SALT WATERSHED -- LAKE ASSESSMENTS				
Apache Lake 2200 acres AZL15060106A-0070	A&Wc Inconclusive FC Attaining FBC Inconclusive DWS Inconclusive AgI Attaining AgL Attaining Category 2 — Attaining Some Uses Trophic status -- Oligotrophic	On the Planning List due to: 1. Missing core parameters: *Escherichia coli*, nitrogen, phosphorus, and total fluoride. 2. Low dissolved oxygen (7 of 45 samples).		

TABLE 16. SALT RIVER WATERSHED — ASSESSMENT, PLANNING LIST, AND 303(d) STATUS

SURFACE WATER DESCRIPTION	2004 ASSESSMENT 5-CATEGORIES LAKE TROPHIC STATUS	2004 PLANNING LIST	STATUS OF 2002 303(d) LIST RECOMMENDATIONS FOR 2004 LIST	OTHER INFORMATION
Big Lake 440 acres AZL15060101-0160	A&Wc Inconclusive FC Attaining FBC Inconclusive DWS Attaining AgI Attaining AgL Attaining Category 2 — Attaining Some Uses Trophic status – Eutrophic	On the Planning List due to: 1. Missing core parameters: *Escherichia coli* and dissolved cadmium. 2. Low dissolved oxygen (1 of 4 samples).		
Canyon Lake 450 acres AZL15060106A-0250	A&Wc Impaired FC Inconclusive FBC Inconclusive DWS Inconclusive AgI Inconclusive AgL Inconclusive Category 5 — Impaired Trophic status not calculated	On the Planning List due to: 1. Chronic ammonia exceedance (1 of 20 sampling events). 2. Missing core parameters: *Escherichia coli*, total fluoride, total boron, total nitrogen, nitrate, total phosphorus, total metals (mercury, arsenic, chromium, lead, and copper), and dissolved metals (copper, cadmium, and zinc).	Add dissolved oxygen to the 303(d) List due to low dissolved oxygen in 7 of 35 samples.	
Crescent Lake 150 acres AZL15060101-0420	A&Wc Impaired FC Attaining FBC Impaired AgI Impaired AgL Impaired Category 5 – Impaired Trophic status – Eutrophic	On the Planning List due to: 1. Fish kill in 1998 related to algal blooms, weed growth, and high pH may indicate a narrative nutrient standard violation. 2. Nitrogen exceedance in 1 of 9 samples. 3. Missing core parameters: *Escherichia coli*, turbidity, and dissolved metals (copper and cadmium).	EPA placed this reach on the 2002 303(d) List for high pH based on 5 of 7 exceedances. Once listed, the lake cannot be delisted until a TMDL is complete or pH data indicate that designated uses are being attained.	
Lake Sierra Blanca 30 acres AZL15060101-1390	A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive Category 3 – Inconclusive Trophic status not calculated	On the Planning List. No current monitoring data. Added in 2002 due to a fish kill in 1998.		Fish kill in 1998 (related to weed growth and high pH) may be evidence of narrative standards violations.
Roosevelt Lake 18,350 acres AZL15060103-1240	A&Ww Inconclusive FC Attaining FBC Inconclusive DWS Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses Trophic status – Mesotropic-Hypereutrophic	On the Planning List due to: 1. Former turbidity standard exceedances before the fire (11 of 46 samples). Causes and sources of the turbidity will be investigated during the next monitoring cycle for this watershed. 2. Missing core parameters: *Escherichia coli*, total nitrogen, and total phosphorus. 3. Insufficient data following the fire to make a full assessment. Monitoring will be scheduled to determine whether residual impacts remain.		EPA may use exceedances of the former turbidity standard as an indicator of narrative standards violations and place this reach on the 2004 303(d) List due to turbidity.
Saguaro Lake 1025 acres AZL15060106A-1290	A&Wc Inconclusive FC Attaining FBC Inconclusive DWS Attaining AgI Attaining AgL Attaining Category 2 – Attaining Some Uses Trophic status – Mesotrophic	On the Planning List due to missing core parameters: *Escherichia coli*, total nitrogen, and total phosphorus.		

Aravaipa Creek, near the Aravaipa Canyon Wilderness Area in southeastern Arizona.

The San Pedro-Willcox Playa-Rio Yaqui Watershed

The San Pedro River begins in the mountains near Cananea Sonora, Mexico, and flows north about 100 miles through the southeast corner of Arizona to join the Gila River near Winkelman, Arizona. This watershed also includes two other hydrologically distinct areas: 1) Willcox Playa, a terminal basin (does not drain out of the area), and 2) Two relatively short drainages, Whitewater Draw and Black Draw, that flow to the Rio Yaqui in Mexico.

This 7,015 square-mile watershed is lightly populated with only 130,000 people (2000 census). Communities in the area include the rapidly growing Sierra Vista area and several historic towns, such as Tombstone, Douglas, and Bisbee. Grazing is widespread, and a significant area of irrigated agriculture is located on the eastern side of the watershed. Historic copper, silver, and gold mining took place across the watershed; however, few mines are still active.

Land ownership is divided approximately as: 40% private land, 40% state land, 20% federal land, and no Tribal lands. The Bureau of Land Management established the 50,000 acre San Pedro Riparian National Conservation Area in 1988 to protect this critical habitat.

Elevation varies from 4,000 feet (above sea level), with desert grassland and warmwater aquatic communities, to 10,700 feet at Mount Graham with alpine forest. Areas above 5,000 feet typically support coldwater aquatic communities where perennial waters exist.

The assessment – Assessments were completed for 35 stream reaches and three lakes. Of the 292 stream miles assessed, 70 miles (five reaches) were attaining all uses and 83 miles (seven reaches) were impaired. All others were assessed as inconclusive or attaining some uses. Of the 11.5 lake acres assessed (three lakes), all were assessed as inconclusive.

A watershed assessment map follows on the next page, illustrating stream and lake assessments by category. The San Pedro **monitoring table (Table 17)** following the map summarizes the water quality data used in the assessment. It is followed by the **assessment table (Table 18)**, which bridges current assessments with past assessments and impaired water identification. Important to note in this table are comments regarding previous 303(d) lists (what has been added and removed), category designations (1 through 5), references to potential actions by EPA, and status of TMDLs.

Detailed information on how to use these tables is found at the beginning of this chapter (p. IV-1). Assessment methods and criteria can be found in Chapter III.

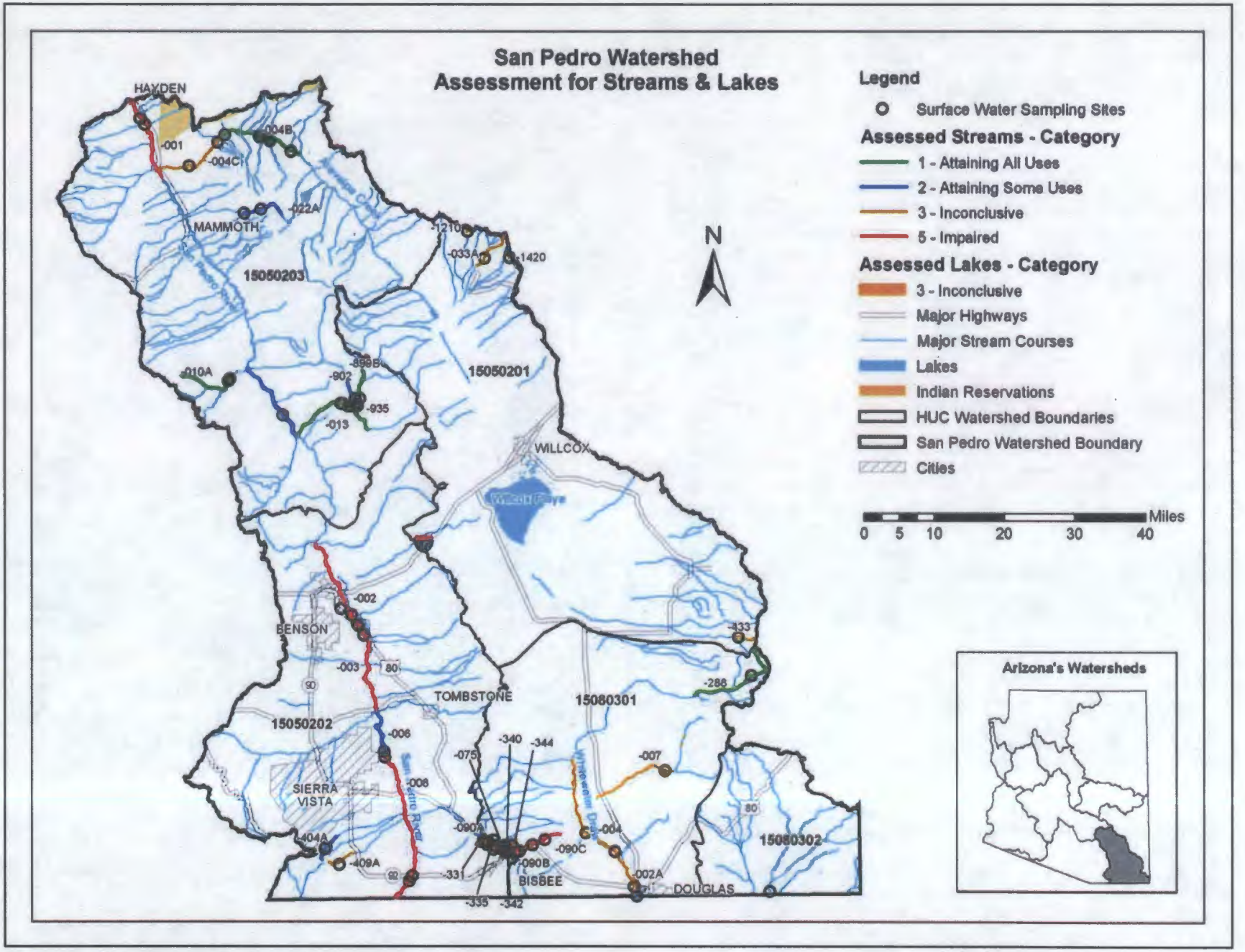

Figure 21. Watershed monitoring and assessments

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
STREAM MONITORING DATA								
Aravaipa Creek Stowe Gulch - Wilderness Area AZ15050203-004B A&Ww, FC, FBC, AgL Unique Water	ADEQ Ambient Monitoring Near springs SPARA012.45 100209	1998 - 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring At east trail head SPARA011.03 100210	1998 - 1 partial suite 2000 - 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring Below Parson's Canyon SPARA010.40 100211	1998 - 1 partial suite 1999 - 1 partial suite 2000 - 1 full + 2 partial suites	No exceedances					
	ADEQ Ambient Monitoring At Hell's Half Acre (West end) SPARA007.92 100716	1999 - 1 full suite 2000 - 4 full suites 2001 - 2 full suites 2002 - 1 full suite	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **AgL Attaining**	**1998 - 2002** **16 samples** **13 sampling events**	**No exceedances**					**ADEQ collected 16 samples at 4 sites in 1998 - 2002. Assessed as "attaining all uses."**
Aravaipa Creek Wilderness Area - San Pedro River AZ15050203-004C A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring At Woods Ranch SPARA006.75 100212	1998 - 1 full suite 2000 - 1 full suite 2002 - 1 Turbidity (former standard)	No exceedances					
	ADEQ Ambient Monitoring 5 miles from terminus SPARA002.96 100213	1998 - 1 partial suite	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**1998 - 2002** **4 samples** **3 sampling events**	**No exceedances**					**ADEQ collected 4 samples at 2 sites in 1998 - 2002. Assessed as "inconclusive" and placed on the Planning List due to missing core parameters: *Escherichia coli*, dissolved oxygen, dissolved metals (cadmium, copper, and zinc), and total metals (mercury, copper, and lead).**
Bass Canyon Creek tributary at 32 26'06"/110 13'18" - Hot Springs Canyon Creek AZ15050203-899B A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring At stream length 9.2 miles SPBAS001.54 100214	1998 - 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring Above Double R Canyon SPBAS000.75 100215	1999 - 1 full suite 2000 - 3 full suites	No exceedances					
	ADEQ Ambient Monitoring Above Hot Springs Canyon SPBAS000.24 100217	1998 - 1 partial suite	No exceedances					

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row A&Ww Attaining FC Attaining FBC Attaining AgL Attaining	1998 - 2000 6 samples 4 sampling events	No exceedances					ADEQ collected 6 samples at 3 sites in 1998 - 2000. Assessed as "attaining all uses."
Bass Canyon, unnamed tributary of headwaters - Bass Canyon Creek AZ15050203-935 A&Ww, FBC, FC (tributary rule)	ADEQ Ambient Monitoring East of Bass Canyon Creek SPUBS000.20 100224	1998 - 1 suite	No exceedances					
	Summary Row A&Ww Inconclusive FC Inconclusive FBC Inconclusive	1998 1 sampling event	No exceedances					Insufficient monitoring data to assess.
Brewery Gulch Wildcat Canyon - Mule Gulch AZ15080301-337 A&We, PBC	ADEQ TMDL Program Above mineralized zone RMBRG000.90	2000 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We acute)	26	1 of 1		
	ADEQ TMDL Program At Mule Gulch RMBRG000.01	2000 - 4 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We - acute)	60 - 150	4 of 4		
			pH SU	6.5 - 9.0 (A&We, PBC)	8 - 7.5	1 of 4		
	Summary Row A&We Impaired PBC Inconclusive	2000 5 samples 4 sampling events	Copper (dissolved) µg/l	varies by hardness (A&We)	26 - 150	5 of 5 events (occurred in 2000)	Impaired	Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.
			pH SU	6.5 - 9.0 (A&We, PBC)	6 - 7.5	1 of 5	Inconclusive	
Buehman Canyon headwaters - end Unique Water AZ15050203-010A A&Ww, FC, FBC, AgL Unique Water	ADEQ Ambient Monitoring 2 miles below Bullock Cyn. SPBHC002.46 100425	1999 - 1 full suite 2000 - 2 full + 1 partial suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) A&Ww	2.4 - 8.3 (31- 89%)	2 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	ADEQ Ambient Monitoring 1/4 mile below dry wash SPBHC002.17 101175	2000 - 1 full suite 2001 - 2 full suites 2002 - 1 full suite	No exceedances					
	Summary Row A&Ww Attaining FC Attaining FBC Attaining AgL Attaining	1999 - 2002 8 samples 8 sampling events	No exceedances					ADEQ collected 8 samples at 2 sites in 1999 - 2002. Assessed as "attaining all uses."
C - Canyon headwaters - Mule Gulch AZ15080301-342 A&We, PBC (tributary rule)	ADEQ TMDL Program At Highway 80 RMCCN000.01	2000 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We)	55	1 of 1		
	Summary Row A&We Inconclusive PBC Inconclusive	2000 1 sampling event	Copper (dissolved) µg/l	varies by hardness (A&We)	55	1 of 1 event (in 2000)	Inconclusive	Samples were collected as part of the Mule Gulch copper TMDL. Copper loadings will be addressed in the Mule Gulch TMDL.

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Copper Creek headwaters - Prospect Cyn. AZ15050203-022A A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Above Bluebird Mine SPCOP007.09 100433	1998 - 1 partial suite 1999 - 1 full suite 2000 - 1 full + 2 partial suites	No exceedances					
	ADEQ Ambient Monitoring Below Dark Canyon SPCOP005.80 100944	1999 - 1 full suite 2000 - 3 full suites	Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 7.1	1 of 1		Lab reporting limits for two other samples were too high to use results for assessment.
	Summary Row A&Ww Inconclusive FC Attaining FBC Attaining AgL Attaining	**1999 - 2000** **9 samples** **5 sampling events**	**Selenium (total)** **µg/L**	**2** **(A&Ww chronic)**	**<5 - 7.1**	**1 of 1 event**	**Inconclusive**	**ADEQ collected 9 samples at 2 sites from 1998 - 2000. Assessed as "attaining some uses" and placed on the Planning List due to selenium exceedance.**
Double R Canyon Creek headwaters - Bass Cyn Creek AZ15050203-902 A&Ww, FC, FBC	ADEQ Ambient Monitoring SPDOU001.00 100222	1998 - 1 full suite	Dissolved oxygen mg/l	> 6.0 (90% saturation) (A&Ww)	5.7 (61%)	1 of 1		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	ADEQ Ambient Monitoring Near Terminus SPDOU000.20 100223	1998 - 1 full suite 2000 - 1 full suite	Dissolved oxygen mg/l	> 6.0 (90% saturation) (A&Ww)	4.7 - 6.2 (59 - 70%)	1 of 2		
	Summary Row A&Ww Attaining FC Attaining FBC Inconclusive	**1998 - 2000** **3 sampling events**	**No exceedances**					**ADEQ collected 3 samples at 2 sites from 1998 - 2000. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameter: *Escherichia coli*.**
Dubacher Canyon headwaters - Mule Gulch AZ15080301-075 A&We, PBC (tributary rule)	ADEQ TMDL Program Below Highway 80 RMDBC000.01	2000 - 1 field + metals	Copper (dissolved) µg/l	Varies by hardness (A&We)	1,400	1 of 1		
			pH (low) SU	6.5-9.0 (A&We, PBC)	2.9	1 of 1		
	Summary Row A&We Inconclusive PBC Inconclusive	**2000** **1 sampling event**	**Copper (dissolved)** **µg/l**	**Varies by hardness** **(A&We)**	**1,400**	**1 of 1 event**	**Inconclusive**	**Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.**
			pH (low) **SU**	**6.5-9.0** **(A&We, PBC)**	**2.9**	**1 of 1**	**Inconclusive**	
Grant Creek headwaters - trib at 32 38'09"/109 56'35" AZ15050201-033A A&Wc, FC, FBC, DWS, AgL	ADEQ Ambient Monitoring 1 mile below Post Creek WPGRA006.56 100561	1999 - 1 full suite 2000 - 1 partial suite	No exceedances					
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive DWS Inconclusive AgL Inconclusive	**1999 - 2000** **2 sampling events**	**No exceedances**					**Insufficient monitoring data to assess.**
Hendricks Gulch headwaters - Mule Gulch AZ15080301-335 A&We, PBC (tributary rule)	ADEQ TMDL Program At Mule Gulch RMHNG000.01	2000 - 3 field + metals	Copper (dissolved) µg/l	Varies by hardness (A&We)	15 - 76	1 of 3		
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	5.8 - 7.4	1 of 2		

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row **A&We Inconclusive** **PBC Inconclusive**	**2000** **3 sampling events**	**Copper (dissolved) µg/l**	**varies by hardness (A&We)**	**15 - 76**	**1 of 3 events**	**Inconclusive**	**Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.**
			pH (low) SU	**6.5 - 9.0 (A&We, PBC)**	**5.8 - 7.4**	**1 of 2**	**Inconclusive**	
Hot Springs Canyon Creek headwaters - San Pedro River AZ15050203-013 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Below Bass Canyon Creek SPHSC006.22 100219	1998 - 1 partial suite	No exceedances					
	ADEQ Ambient Monitoring Below Wildcat Canyon SPHSC006.13 100574	1999 - 1 full suite 2000 - 2 full + 2 partial suites	No exceedances					
	ADEQ Ambient Monitoring Southwest of Wildcat Peak SPHSC006.04 100220	1998 - 1 partial suite	No exceedances					
	Summary Row **A&Ww Attaining** **FC Attaining** **FBC Attaining** **AgL Attaining**	**1998 - 2000** **7 samples** **6 sampling events**	**No exceedances**					**ADEQ collected 7 samples at 3 sites in 1998-2000. Assessed as "attaining all uses."**
Leslie Canyon Creek headwaters - Whitewater Draw 15080301-007 A&Ww, FBC, FC, AgL	USGS Ambient Monitoring At Leslie Canyon National Wildlife Refuge RMLES007.02 101500	2002 - 1 partial suite	Dissolved oxygen mg/L	>6.0 (90% saturation) (A&Ww)	4.5 (52%)	1 of 1		
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Inconclusive**	**2002** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**
Miller Canyon Creek headwaters - Broken Arrow Ranch Road AZ15050202-409A A&Wc, FC, FBC, DWS, AgL	ADEQ Biocriteria Program Near headwaters SPMLC008.64 100592	1998 - 1 suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **DWS Inconclusive** **AgL Inconclusive**	**1998** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**
Morales Creek headwaters - Mule Gulch AZ15080301-331 A&We, PBC (tributary rule)	ADEQ TMDL Program Near Mule Gulch RMMOR000.40	2000 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We)	18	1 of 1		
	Summary Row **A&We Inconclusive** **PBC Inconclusive**	**2000** **1 sampling event**	**Copper (dissolved) µg/l**	**varies by hardness (A&We)**	**18**	**1 of 1 event**	**Inconclusive**	**Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.**

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
Mule Gulch headwaters - above Lavender Pit AZ15080301-090A A&Ww, FC, PBC	ADEQ TMDL Program Below Spring Canyon RMMLG008.16	2002 - 1 field + metals	No exceedances					
	ADEQ TMDL Program At Castle Rock (MG-2) RMMLG007.88 100506	1998 - 4 pH, copper, zinc	No exceedances					
	ADEQ TMDL Program At Castle Rock RMMLG007.86	2000 - 1 field + 2 metals	No exceedances					
	ADEQ TMDL Program Above Lavender Pit RMMLG007.62 (Mule Gulch 100)	1999 - 1 field + metals 2000 - 5 field + metals 2002 - 4 field + metals	Copper (dissolved) µg/l	varies by hardness (A&Ww - acute)	10 - 160	7 of 10		
			Copper (dissolved) µg/l	varies by hardness (A&Ww - chronic)	10 - 160	8 of 10		
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	5.6 - 8.7	1 of 5		
	Summary Row **A&Ww Impaired** **FC Inconclusive** **PBC Inconclusive**	**1998 - 2000** **15 sampling events**	**Copper (dissolved) µg/l**	**varies by hardness (A&Ww - acute)**	**10 - 160**	**7 of 15 events**	**Impaired**	**ADEQ collected 15 samples at 4 sites in 1998-2000. Assessed as "impaired" due to copper exceedances.** **Placed on the Planning List due to missing core parameters: *Escherichia coli*, dissolved oxygen, turbidity/SSC, and total mercury.**
			Copper (dissolved) µg/l	**varies by hardness (A&Ww - chronic)**	**10 - 160**	**8 of 15 events**	**Impaired**	
			pH (low) SU	**6.5 - 9.0 (A&We, PBC)**	**5.8 - 8.7**	**1 of 10 events**	**Attaining**	
Mule Gulch above Lavender Pit - Bisbee WWTP AZ15080301-090B A&We, PBC	ADEQ TMDL Program Above mill site RMMLG007.20	1999 - 1 pH + metals	Copper (dissolved) up/l	Varies by hardness (A&We)	4,200	1 of 1		
				1300 (PBC total)	4,200	1 of 1		Dissolved copper data were compared to the total copper standards.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	3.1	1 of 1		
	ADEQ TMDL Program Below old mill site RMMLG007.19 (Mule Gulch 150)	2000 - 2 pH + metals	Copper (dissolved) up/l	Varies by hardness (A&We)	420 - 4,000	4 of 4		
				1300 (PBC total)	420 - 4,000	3 of 4		Dissolved copper data were compared to the total copper standards.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	3 - 5.9	1 of 2		
	ADEQ TMDL Program At traffic circle RMMLG007.16 100507	1998 - 3 pH + metals	Copper (dissolved) µg/l	Varies by hardness (A&We)	1762-10,050	3 of 3		
				1300 (PBC total)	2356 - 10050	3 of 3		Dissolved copper data were compared to the total copper standards.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	3.4 - 5.6	3 of 3		
			Zinc (dissolved) µg/l	Varies by hardness (A&We)	2,040-3,760	2 of 3		

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ TMDL Program Above C-Canyon RMMLG006.99	1999 - 1 pH + metals	Copper (dissolved) µg/L	Varies by hardness (A&We)	12,000	1 of 1		
				1300 (PBC - total)	12,000	1 of 1		Dissolved copper data were compared to the total copper standards.
			Lead (dissolved) µg/L	15 (PBC- total)	35	1 of 1		Dissolved lead data were compared to the total lead standards.
			pH (low) SU	6.5 - 9.0 (A&We, PBC)	3.2	1 of 1		
	Summary Row **A&We Impaired** **PBC Impaired**	**1998 - 2002** **17 samples** **10 sampling events**	**Copper (dissolved)** **µg/L**	**varies by hardness (A&We)**	**11 - 40,000**	**8 of 8 events (in 1998-2002)**	**Impaired**	**ADEQ collected 7 samples at 4 sites in 1998-2002. Assessed as "impaired" due to copper and pH exceedances.** ***EPA placed pH on the list based on 7 exceedances in 15 samples. Arizona's Impaired Water Identification Rule requires at least 20 samples to base a listing decision for pH; however, once listed a parameter cannot be delisted until a TMDL is complete or data indicate designated uses are being "attained".** **Zinc is now supporting uses based on 0 exceedances in 4 sampling events in the last 3 years of sampling.** **A TMDL for metals and low pH is currently being prepared for Mule Gulch and contributing tributaries.** **Also placed on the Planning List due to dissolved lead exceedance.**
				1300 (PBC - total)	11 - 4,000	7 of 8	Inconclusive	
			Lead (dissolved) µg/L	15 (PBC- total)	35	1 of 2	Inconclusive	
			pH (low) SU	6.5 - 9.0 (A&We, PBC, AgL)	3.2	7 of 7	Inconclusive (Impaired*)	
			Zinc (dissolved) µg/l	Varies by hardness (A&We)	2,040 - 3,780	2 of 3 events (Did not exceed last 3 years)	Attaining	
Mule Gulch Bisbee WWTP - Highway 80 bridge AZ15080301-090C A&Wedw, PBC	ADEQ TMDL Program Below WWTP (Site 4) RMMLG006.38 100508	1998 - 4 pH + metals	Copper (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<15 - 30	2 of 4		
				varies by hardness (A&Wedw acute)	<15 - 30	1 of 4		
	ADEQ TMDL Program At MG-200 (new site) RMMLG006.24	2000 - 3 field + metals 2002 - 2 field + metals	Copper (dissolved) ug/l	Varies by hardness (A&Wedw chronic)	<10 - 9400	5 of 5		
				Varies by hardness (A&Wedw acute)	<10 - 9400	5 of 5		
				1300 (PBC - total)	55 - 9400	2 of 4		Dissolved copper data were compared to the total copper standard.
			Cadmium (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<1 - 18	3 of 4		
			Lead (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<5 - 71	1 of 3		
				15 (PBC - total)	<5 - 71	1 of 3		Dissolved lead data were compared to the total lead standard.

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			pH SU	6.5 - 9.0 (A&Wedw, PBC)	3.1 - 8.2	2 of 4		
			Zinc (dissolved) µg/l	varies by hardness (A&Wedw)	110 - 4,300	3 of 5		
	ADEQ TMDL Program At MG-200 (old site) RMMLG006.09	1999 - 1 field + metals 2000 - 2 field + metals	Cadmium (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<1 - 16	3 of 3		
				varies by hardness (A&Wedw acute)	<1 - 16	1 of 3		
			Copper (dissolved) µp/l	varies by hardness (A&Wedw chronic)	10 - 7,300	3 of 3		
				varies by hardness (A&Wedw acute)	10 - 7,300	3 of 3		
				1300 (PBC)	<10 - 7300	1 of 3		Dissolved copper data were compared to the total copper standard.
			pH (low) SU	6.5 - 9.0 (A&Wedw, PBC)	4.2 - 8.1	1 of 2		
			Zinc (dissolved) µg/l	Varies by hardness (A&Wedw)	50 - 1,100	2 of 3		
	ADEQ TMDL Program Site MG6 RMMLG006.03 100509	1998 - 3 field + metals	Copper (dissolved) µg/l	Varies by hardness (A&Wedw acute)	43-85	3 of 3		
				varies by hardness (A&Wedw chronic)	43 - 85	3 of 3		
	ADEQ TMDL Program At MG-300 (MG-1) At 1st Elfrida cutoff RMMLG004.65	1998 - 2 field + metals 1999 - 1 field + metals 2000 - 4 field + metals 2002 - 1 field + metals	Copper (dissolved) up/l	varies by hardness (A&Wedw chronic)	44 - 12,000	7 of 8		
				varies by hardness ('A&Wedw acute)	44 - 12,000	6 of 8		
				1300 (PBC - total)	44 - 12,000	2 of 8		Dissolved copper data were compared to the total copper standards.
			Cadmium (dissolved) µg/L	varies by hardness (A&Wedw chronic)	1.2 - 34	5 of 7		
				varies by hardness (A&Wedw acute)	1.2 - 34	3 of 7		
			Leed (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<5 - 59	2 of 4		
				15 (PBC - total)	<5 - 59	2 of 4		Dissolved lead data were compared to the total lead standard.
			Zinc (dissolved) µg/l	Varies by hardness (A&Wedw)	<50 - 2,200	3 of 9		
			pH (low) SU	6.5-9.0 (A&Wedw, PBC)	3.16 - 8.58	2 of 10		

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row A&Wedw Impaired PBC Impaired	1998-2002 24 samples 12 sampling events	Copper (dissolved) µg/l	varies by hardness (A&Wedw acute)	<10 - 9400	12 of 12 events (in 1998-2002)	Impaired	ADEQ collected 24 samples at 8 sites in 1998 - 2002. Assessed as "impaired" due to copper, cadmium, and zinc exceedances and low pH. A TMDL for metals and low pH is currently being prepared for Mule Gulch and contributing tributaries. Also placed on the Planning List due to lead exceedance and missing core parameters: dissolved oxygen, *Escherichia coli*, and turbidity/SSC.
				varies by hardness (A&Wedw chronic)	<10 - 9400	12 of 12 events	Impaired	
				1300 (PBC - total)	55 - 9400	8 of 21	Impaired	
			Cadmium (dissolved) µg/L	varies by hardness (A&Wedw acute)	<1 - 18	3 of 8 events (in 1998-2000)	Impaired	
				varies by hardness (A&Wedw chronic)	<1 - 18	6 of 8 events	Impaired	
			Lead (dissolved) µg/L	varies by hardness (A&Wedw chronic)	<5 - 71	1 of 6 events	Inconclusive	
				15 (PBC - total)	<5 - 71	1 of 5	Inconclusive	
			pH SU	6.5 - 9.0 (A&Wedw, PBC)	3.1 - 8.2	5 of 23	Impaired	
			Zinc (dissolved) µg/l	varies by hardness (A&Wedw acute)	110 - 4,300	5 of 12 events (in 1998 - 2002)	Impaired	
				varies by hardness (A&Wedw chronic)	110 - 4,300	5 of 12 events	Impaired	
Mule Gulch Highway 80 bridge - Whitewater Draw AZ15080301-090D A&We, PBC, AgL	ADEQ TMDL Program At 2nd Elfrida cutoff RMMLG003.40	1998 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness A&We acute	5,500	1 of 1		
				1300 (PBC - total)	5,500	1 of 1		Dissolved copper data were compared to the total copper standards.
				500 (AgL)	5,500	1 of 1		
	Summary Row A&We Inconclusive PBC Inconclusive AgL Inconclusive	1998 1 sample	Copper (dissolved) µg/l	varies by hardness A&We acute	5,500	1 of 1 event	Inconclusive	ADEQ collected 1 sample in 2000. Reach assessed as "inconclusive" and placed on the Planning List due to copper exceedances and insufficient monitoring.
				500 (AgL)	5,500	1 of 1	Inconclusive	
				1300 (PBC - total)	5,500	1 of 1	Inconclusive	
Mural and Grassy Hill Tributary headwaters - Mule Gulch AZ15080301-334 A&We, PBC (tributary rule)	ADEQ TMDL Program At Mule Gulch RMMHC000.01	2000 - 1 field + metals	Copper (dissolved) µg/l	varies by hardness (A&We)	15	1 of 1		
	Summary Row A&We Inconclusive PBC Inconclusive	2000 1 sampling event	Copper (dissolved) µg/l	varies by hardness (A&We)	15	1 of 1 event (in 2000)	Inconclusive	Samples were collected as part of the Mule Gulch copper TMDL. Copper loadings will be addressed in the Mule Gulch TMDL.

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
OK and Youngblood tributaries headwaters - Brewery Gulch AZ15050202-999 A&We, PBC (tributary rule)	ADEQ TMDL Program On "B" Hill	2000 - 1 field + metals	Copper (dissolved) µg/L	varies by hardness (A&We)	180	1 of 1		
	Summary Row **A&We Inconclusive** **PBC Inconclusive**	**2000** **1 sampling event**	**Copper (dissolved)** **µg/L**	**varies by hardness** **(A&We)**	**180**	**1 of 1 event** **(in 2000)**	**Inconclusive**	**Samples were collected as part of the Mule Gulch copper TMDL. Copper loadings will be addressed in the Mule Gulch TMDL.**
Ramsey Canyon Creek headwaters - Forest Road 110 AZ15050202-404A A&Wc, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Above Nature Conservancy SPRMC007.43 100625	1998 - 1 partial suite 2000 - 1 full suite 2001 - 1 full suite	No exceedances					
	ADEQ Ambient Monitoring At Box Canyon SPRMC007.16 101060	2000 - 1 full + 1 partial suites	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Attaining** **FBC Attaining** **AgI Attaining** **AgL Attaining**	**1998 - 2001** **5 samples** **5 sampling events**	**No exceedances**					**ADEQ collected 5 samples at 2 sites in 1998 - 2001. Assessed as "attaining some uses" and placed on the Planning List due to missing core parameter: dissolved zinc.**
Rucker Canyon Creek headwaters - Whitewater Draw AZ15080301-288 A&Wc, FC, FBC, AgL	ADEQ Ambient Monitoring Above upper-most campsite RMRUC005.63 100938	1999 - 1 full suite 2000 - 3 full suites	Dissolved oxygen mg/L	> 7.0 (90% saturation) (A&Wc)	6.4 - 7.9 (77 - 95%)	1 of 4		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	Summary Row **A&Wc Attaining** **FC Attaining** **FBC Attaining** **AgL Attaining**	**1999 - 2000** **4 sampling events**	**No exceedances**					**ADEQ collected 4 samples in 1999-2000. Assessed as "attaining all uses."**
San Pedro River Mexico border - Charleston AZ15050202-008 A&Ww, FC, FBC, AgI, AgL	USGS Ambient Monitoring At Palominas (transect site) 100485	2001 - 1 pH, fluoride	No exceedances					
	ADEQ & USGS Fixed Station Near Palominas SPSPR113.55 100275	1998 - 3 full suites 1999 - 2 full + 1 partial suites 2000 - 3 full suites + 7 partial suites 2001 - 4 full suites + 14 partial suites 2002 - 1 full suites + 9 partial suites	Arsenic (total) µg/L	50 (FBC)	<10 - 86	1 of 16		
			Copper (dissolved) µg/L	varies by hardness (A&Ww chronic)	<10 - 23	2 of 16		
				varies by hardness (A&Ww acute)	<10 - 23	1 of 16		
			Copper (total) µg/L	500 (AgL)	<10 - 1200	1 of 16		
			Dissolved oxygen mg/l	> 6.0 (90% saturation) (A&Ww)	4.1 - 9.5 (50 - 94%)	2 of 16		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			Escherichia coli CFU	235 (FBC)	0 - 493	1 of 16		

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			Lead (total) µg/L	15 (FBC)	<5 - 230	1 of 16		
				100 (AgL)	<5 - 230	1 of 16		
			Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 5	1 of 1		Lab reporting limits for 15 other selenium samples were too high to use results for assessment.
			Turbidity (former standard) NTU	50 (A&Ww)	1 - >1000	2 of 16		
	USGS & ADEQ Fixed Station #09471000 At Charleston SPSPR096.49 100291	1998 - 12 partial suites 1999 - 8 partial suites 2000 - 10 partial suites 2001 - 11 partial suites 2002 - 9 partial suites	Dissolved oxygen mg/l	> 6.0 (A&Ww)	5.6 - 9.9	3 of 50		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
	Summary Row A&Ww Impaired FC Attaining FBC Attaining AgI Attaining AgL Attaining	**1998 - 2002** **95 samples** **51 sampling events**	**Arsenic (total)** **µg/L**	**50** **(FBC)**	**<10 - 86**	**1 of 16**	**Attaining**	**USGS and ADEQ collected 95 samples at 3 sites in 1998 - 2002. Assessed as "impaired" due to copper exceedances.** **Also placed on the Planning List due to one selenium exceedance.**
			Copper (dissolved) **µg/L**	**varies by hardness** **(A&Ww chronic)**	**<10 - 23**	**2 of 16 events**	**Impaired**	
				varies by hardness **(A&Ww acute)**	**<10 - 23**	**1 of 16 events** **(in 2001)**	**Inconclusive**	
			Copper (total) **µg/L**	**500** **(AgL)**	**<10 - 1200**	**1 of 16**	**Attaining**	
			Escherichia coli **CFU**	**235** **(FBC)**	**0 - 493**	**1 of 16 events** **(in 1999)**	**Attaining**	
			Lead (total) **µg/L**	**15** **(FBC)**	**<5 - 230**	**1 of 16**	**Attaining**	
				100 **(AgL)**	**<5 - 230**	**1 of 16**	**Attaining**	
			Selenium (total) **µg/L**	**2** **(A&Ww chronic)**	**<5 - 5**	**1 of 1 event**	**Inconclusive**	
			Turbidity (former standard) NTU	50 (A&Ww)	1 - >1000	2 of 16	Attaining	
San Pedro River Charleston - Walnut Gulch AZ15050202-006 A&Ww, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring Below Graveyard Gulch SPSPR095.71 100653	1999 - 1 full suite 2000 - 2 full + 1 partial suite	Turbidity (former standard) NTU	50 (A&Ww)	2 - 258	1 of 4		

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	Summary Row A&Ww Inconclusive FC Attaining FBC Attaining Agl Attaining AgL Attaining	**2000** **4 sampling events**	**Turbidity (former standard)** **NTU**	**50** **(A&Ww)**	**1 - 258**	**1 of 4**	**Inconclusive (see comment)**	**ADEQ collected 4 samples in 2000. Assessed as "attaining some uses" and placed on the Planning List due to exceedence of the former turbidity standard. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.**
San Pedro River Babocomari - Dragoon Wash AZ15050202-003 A&Ww, FC, FBC, Agl, AgL	Hargis & Associates CERCLA Monitoring Above Apache Nitrogen (Apache Site 12) SPSPR079.20	1998 - 2 nitrate 1999 - 3 nitrate	No exceedances					Monitoring is upstream of a Superfund site with nitrate contamination problems.
	ADEQ Ambient Monitoring 0.8 miles south of Hwy 80 SPSPR077.66 100281	1999 - 1 full suite 2000 - 2 full + 1 partial suites	*Escherichia coli* CFU/100 ml	235 (FBC)	39 - 660	2 of 4		
	Summary Row A&Ww Attaining FC Attaining FBC Impaired Agl Attaining AgL Attaining	**1999 - 2001** **9 sampling events**	***Escherichia coli*** **CFU/100 ml**	**235** **(FBC)**	**39-660**	**2 of 4 events (in 2000)**	**Impaired**	**ADEQ collected 4 samples and Hargis & Associates collected 5 samples at separate sites in 1998 - 2000. Assessed as "impaired" due to *Escherichia coli* exceedances.**
San Pedro River Dragoon Wash - Tres Alamos AZ15050202-002 A&Ww, FC, FBC, Agl, AgL	Hargis & Associates CERCLA Monitoring At Apache Nitrogen Products (Apache Site 3) SPSPR078.69	1998 - 2 nitrate 1999 - 2 nitrate 2000 - 4 nitrate 2001 - 5 nitrate	Nitrate (as N) mg/L	10 (A&Ww) (site specific standard)	1.6 - 37	4 of 13		Monitoring is downstream of a Superfund site with nitrate contamination problems.
	Hargis & Associates CERCLA Monitoring At Apache Nitrogen Products (Apache Site 4) SPSPR077.76	2001 - 1 nitrate	Nitrate (as N) mg/L	10 (A&Ww) (site specific standard)	35	1 of 1		
	Hargis & Associates CERCLA Monitoring At Apache Nitrogen Products Survey from Site 12 to Site 13 SPSPR076	2001 - 80 sites (1 sample each site) nitrate samples	Nitrate (as N) mg/L	10 (A&Ww) (site specific standard)	<1 - 52	28 of 80 sites exceeded		
	Hargis & Associates CERCLA Monitoring (Apache Site 13) SPSPR076.12	1998 - 3 nitrate 1999 - 2 nitrate 2000 - 4 nitrate 2001 - 5 nitrate	Nitrate (as N) mg/L	10 (A&Ww) (site specific standard)	0.74 - 28	4 of 14		
	Summary Row A&Ww Impaired FC Inconclusive FBC Inconclusive Agl Inconclusive AgL Inconclusive	**1998 - 2002** **108 samples** **15 sampling events**	**Nitrate (as N)** **mg/l**	**10** **(A&Ww)**	**0.43 - 22.6**	**9 of 28 (excluding survey)** **35 of 108 (including survey)**	**Impaired**	**Hargis and Associates collected 108 samples at 53 sites in 1998 - 2001 to monitor the effectiveness of cleanup projects at Apache Nitrogen Products. Assessed as "impaired" due to nitrate and placed on the Planning List due to missing all core parameters.**

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
San Pedro River Hot Springs Cr - Redfield Cyn AZ15050203-011 A&Ww, FC, FBC, AgI, AgL	ADEQ Ambient Monitoring At Cascabel SPSPR046.96 100289	1999 - 1 full suite 2000 - 4 full suites 2001 - 1 full suite 2002 - 2 full suites	Dissolved oxygen mg/L	> 6.0 (90% saturation) (A&Ww)	5.6 - 10.1 (75 - 113%)	1 of 8		Low dissolved oxygen due to naturally occurring ground water upwelling, and not anthropogenic causes. Not included in final assessment.
			Escherichia coli CFU/100 ml	235 (FBC)	<1 - 16,000	1 of 7		Flood conditions present.
			Turbidity (former standard) NTU	50 (A&Ww)	2 - >1000	1 of 8		Flood conditions present.
	Summary Row A&Ww Inconclusive FC Attaining FBC Inconclusive AgI Attaining AgL Attaining	1999 - 2002 8 samples 8 sampling events	*Escherichia coli* CFU/100 ml	235 (FBC)	<1 - 16,000	1 of 7 events (in 2000)	Inconclusive	ADEQ collected 8 samples in 1999 - 2002. Assessed as "attaining some uses" and placed on the Planning List due to: 1. *Escherichia coli* exceedances and 2. Former turbidity standard exceedances. Monitoring will be scheduled to determine whether suspended sediment or bottom deposit violations are occurring.
			Turbidity (former standard) NTU	50 (A&Ww)	2 - >1000	1 of 8	Inconclusive (see comment)	
San Pedro River Aravaipa Creek - Gila River AZ15050203-001 A&Ww, FC, FBC, AgL	ADEQ Ambient Monitoring Below Eskiminzin Wash SPSPR003.74 100726	1998 - 1 partial suite 1999 - 1 full suite 2000 - 5 full suites 2001 - 2 full suites 2002 - 1 full suite	Arsenic (total) µg/L	50 (FBC)	<10 - 63	1 of 9		
			Escherichia coli CFU/100 ml	235 (FBC)	2 - 2636	2 of 9		
			Lead (total) µg/L	15 (FBC)	<5 - 140	1 of 9		
			Mercury (total) µg/L	0.01 (A&Ww chronic)	<0.5 - 0.67	1 of 1		Lab reporting limits for 8 other mercury samples were too high to use results for assessment.
			Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 11	2 of 2		Lab reporting limits for 7 other selenium samples were too high to use results for assessment.
			Turbidity (former standard) NTU	50 (A&Ww)	2 - >1000	1 of 10		
	ADEQ Ambient Monitoring Upstream of Roach Wash SPSPR002.88 101348	2002 - 2 full + 1 turbidity	No exceedances					
	Summary Row A&Ww Impaired FC Attaining FBC Impaired AgL Attaining	1998 - 2002 13 samples 10 sampling events	Arsenic (total) µg/L	50 (FBC)	<10 - 63	1 of 11	Attaining	ADEQ collected 13 samples at 2 sites in 1998 - 2000. Assessed as "impaired" due to *Escherichia coli* and selenium exceedances. Placed on the Planning List due to mercury exceedances.
			Escherichia coli CFU/100 ml	235 (FBC)	2 - 2636	2 of 11 events (in 2000 and 2001)	Impaired	
			Lead (total) µg/L	15 (FBC)	<5 - 140	1 of 11	Attaining	
			Mercury (dissolved) µg/L	0.01 (A&Ww chronic)	<0.5 - 0.67	1 of 1 event	Inconclusive	

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED – 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
			Selenium (total) µg/L	2 (A&Ww chronic)	<5 - 11	2 of 2 events	Impaired	
			Turbidity (former standard) NTU	50 (A&Ww)	2 - >1000	1 of 13	Attaining	
Spring Canyon Creek headwaters - Mule Gulch AZ15080301-333 A&We, PBC (tributary rule)	ADEQ TMDL Program At confluence with Mule Gulch RMSPC000.10	2000 - 1 field + metals	No exceedances					
	Summary Row A&We Inconclusive PBC Inconclusive	2000 1 sampling event	No exceedances					Samples were collected as part of the Mule Gulch copper TMDL. Any copper or pH loadings would be addressed in the Mule Gulch TMDL.
Ward Canyon Creek headwaters - Turkey Creek AZ15050201-433 A&Wc, FC, FBC, AgL	ADEQ Biocriteria Program Above Salisbury Canyon WPWRC000.31 100682	1998 - 1 partial suite	No exceedances					
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgL Inconclusive	1998 1 sampling event	No exceedances					Insufficient monitoring data to assess.
Whitewater Draw Gadwell Canyon - unnamed tributary 15080301-003 AZ15080301-004 A&We, PBC, AgL	ADEQ TMDL Program At Double Adobe RMWHD010.02	2000 - 1 partial suite	No exceedances					
	ADEQ TMDL Program At Kings Highway RMWHD006.60 100229	1998 - 1 field + metals	Lead (total) µg/l	15 (FBC)	116	1 of 1		
				100 (AgL)	116	1 of 1		
	Summary Row A&We Inconclusive PBC Inconclusive AgL Inconclusive	1998 - 2000 2 sampling events	Lead (total) µg/l	15 (FBC)	116	1 of 1	Inconclusive	ADEQ collected 2 samples in 1998-2000. Assessed as "inconclusive" and placed on the Planning List due to: 1. Lead exceedance and 2. Insufficient monitoring events.
				100 (AgL)	116	1 of 1	Inconclusive	
Whitewater Draw unnamed tributary 15080301-003 to unnamed tributary at 31 20'36"/109 34'46" AZ15080301-002A A&We, PBC, AgL	ADEQ TMDL Program At Highway 80 (WD-1) RMWHD001.73 100510	1998 - 1 pH + metals	Lead (total) µg/L	15	68	1 of 1		
	Summary Row A&We Inconclusive PBC Inconclusive AgL Inconclusive	1998 1 sampling event	Lead (total) µg/l	15 (FBC)	68	1 of 1	Inconclusive	Insufficient monitoring data to assess. Placed on the Planning List due to lead exceedance.
Whitewater Draw Unnamed tributary at 31 20'36"/109 34'46" to Mexico border AZ15080301-002B A&Ww, FBC, FC AgL	ADEQ TMDL Program Site WD-1A RMWHD0.012 100512	1998 - 4 pH + metals	Lead (total) µg/L	15	84	1 of 4		

TABLE 17. SAN PEDRO - WILLCOX PLAYA - RIO YAQUI WATERSHED -- 2004 ASSESSMENT MONITORING DATA

STREAM NAME SEGMENT WATERBODY ID DESIGNATED USES	AGENCY AND PROGRAM SITE DESCRIPTION SITE CODE ADEQ DATABASE ID	YEAR SAMPLED NUMBER AND TYPE OF SAMPLES	EXCEEDANCE OF STANDARDS BY SITE					
			PARAMETER UNITS	STANDARD DESIGNATED USE	RANGE OF RESULTS	FREQUENCY EXCEEDED	DESIGNATED USE SUPPORT	COMMENTS
	ADEQ TMDL Program At International Border RMWHD0.011 101069	2000 - 1 arsenic, beryllium	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgL Attaining**	**1998 - 2000** **5 samples** **5 sampling events**	**Lead (total)** **µg/l**	**15** **(PBC)**	**84**	**1 of 4**	**Inconclusive**	**ADEQ collected 5 samples at 2 sites in 1998-2000. Assessed as "attaining some uses" and placed on the Planning List due to:** **1. Lead exceedance, and** **2. Missing core parameters: *Escherichia coli*, dissolved oxygen, turbidity/SSC, dissolved cadmium, and total mercury.**
Winwood Canyon headwaters-Mule Gulch AZ15080301-340 A&We, PBC (tributary rule)	ADEQ TMDL Program At Mural Hill Tributary (Above mining zone) RMWMC000.66	2000 - 1 pH + metals	Copper (dissolved) µg/l	varies by hardness (A&We)	28	1 of 1		
	ADEQ TMDL Program Above Old Mill Site, (Below mineralized zone) RMWMC000.37	2000 - 1 pH + metals	pH (low) SU	6.5 - 9.0 (A&We, PBC)	6.1	1 of 1		
	Summary Row **A&We Inconclusive** **PBC Inconclusive**	**2000** **2 samples** **1 sampling event**	**Copper (dissolved)** **µg/l**	**varies by hardness** **(A&We)**	**28**	**1 of 2 events** **(occurred in 2000)**	**Inconclusive**	**Samples were collected as part of the Mule Gulch copper TMDL. Copper and pH loadings will be addressed in the Mule Gulch TMDL.**
			pH (low) **SU**	**6.5 - 9.0** **(A&We, PBC)**	**6.1**	**1 of 2**	**Inconclusive**	
LAKE MONITORING DATA								
Riggs Flat Lake AZL15050201-1210 A&Wc, FC, FBC, AgI, AgL	ADEQ Lakes Program WPRIG-A 100074	1998 - 1 partial suite	No exceedances					
	Summary Row **A&Wc Inconclusive** **FC Inconclusive** **FBC Inconclusive** **AgI Inconclusive** **AgL Inconclusive**	**1998** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**
Snow Flat Lake AZL15050201-1420 A&Wc, FBC, FC, AgI, AgL	ADEQ Lakes Program WPSNO-A 100084	1998 - 1 full suite	No exceedances					
	Summary Row A&Wc Inconclusive FC Inconclusive FBC Inconclusive AgI Inconclusive AgL Inconclusive	1998 1 sampling event	No exceedances					Insufficient monitoring data to assess.
Twin Pond AZ15080302-0001 A&Ww, FC, FBC (tributary rule)	USGS Ambient Monitoring SPTWP-USGS 101581	2002 - 1 full suite	No exceedances					
	Summary Row **A&Ww Inconclusive** **FC Inconclusive** **FBC Inconclusive**	**2002** **1 sampling event**	**No exceedances**					**Insufficient monitoring data to assess.**